AMERICAN NURSERYMAN

The Nurseryman's Forte: To Make America More Beautiful and Fruitful

SEPTEMBER 15, 1939

Deutzia Carnea

AMERICAN NURSERYMAN

Chief Exponent of the Nursery Trade

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STIMULATING SALES.

The pleas of members of the American Association of Nurserymen for publicity material and aids to advertising, echoed widely and long felt, will be answered this autumn in two ways.

One is the provision of mats for advertisements in local newspapers, of which examples were shown at the Portland convention. As a means of measuring response to these advertisements, the association plans to provide members with copies of an illustrated 2-color promotional booklet on landscaping, to be supplied members at cost and used in answering inquiries. The mat advertisements refer to the booklets and invite readers to write for them. Not only will the booklets have advertising value themselves, but they will enable users of the mats to gauge the effects of their advertising.

Because the market development committee has found so much interest in the clip sheet service proposed last year, it is now planning to prepare its own news articles and send them as news releases to a list of papers recommended by members themselves. The secretary has recently requested members to list the subjects they would like to have treated in the news releases, to supply a list of newspapers to which the material should be sent, to contribute 500-word articles on nursery subjects which would be good copy for a member's locality and finally, to send some financial contributions to support this service.

Any nurseryman doing a local retail or landscape business should welcome this aid in stimulating his sales. Reflection on what it would cost an individual to supply his own material should convince him that this service should easily be worth not only the amount of his contribution, but possibly his membership fee as well. The nursery industry needs just this type of thing, and it is hoped that ample support will develop for it.

The Mirror of the Trade

TRADE BARRIER BILLS.

Interstate trade barrier bills were rejected by a dozen or more state legislatures at their 1939 sessions, according to a survey made by the bureau of agricultural economics. Existing barriers were lowered or repealed in some states. Few states enacted new trade barrier legislation.

Bureau officials declared that the 1939 record is the best in many years. They pointed out that hundreds of barrier laws are still on the books, but said, "The record of the past year indicates there has been a halt in the alarming growth of interstate trade interference." The hope was expressed that in 1941, when most state legislatures meet again, many of the worst barriers will be removed.

Barriers affecting interstate trade in dairy products and oleomargarine were the principal objects of legislative attention this session. Some states gave attention to merchant-trucker bills and to port-of-entry laws. Some states have considered retaliation against barriers in other states, but the bureau reported that few, if any, retaliatory laws were passed. Only two states—Maine and Wyoming—reported the enactment of laws which may set up additional barriers to interstate trade.

Many trade barrier bills were introduced in the state legislatures this session, but practically all were rejected or withdrawn. In Arkansas, a bill to tax certain agricultural products "from three or four northern states which discriminate against Arkansas products" was withdrawn. A bill directing the Arkansas state plant board to levy a tax against all agricultural products from any state which placed a tax against Arkansas products, the Arkansas tax to be as near as possible the same as that placed by the other states, "was never brought to a vote."

In Kansas, a merchant-trucker bill failed to pass, and an itinerant merchant bill passed the senate, but was killed in the house.

Remedial action was taken in some states. In Idaho the department of agriculture recently revised the plant quarantines and in several cases removed or revised restrictions which had been in effect.

DEUTZIA CARNEA.

Deutzia carnea, one of the best of the dwarf deutzias, forms a rounded mass with drooping branches, grayish-green leaves and pinkish-white flowers.

The flowers are borne in loose, upright panicles with purple sepals. This deutzia is hardier than the rest of the genus. Early spring pruning is necessary because the wood is soft and often tender in cool climates. In general, however, this shrub needs little pruning, with the exception of the removal of the old wood. A light soil of a pH 6.0 to 8.0 will prove most suitable. Shade is usually preferred by most deutzias.

Propagation is best accomplished by softwood cuttings taken in summer, which will usually root 100 per cent after seven to fourteen days.

WORD is said to have gone around that a patented variety of plant can be sold under another name or without a name to avoid responsibility to the patent owner. That obviously is without basis of fact, for the name is not a part of the patent description. The plant is patented on its characteristics.

TAKING care of customers has made E. W. Townsend Sons Nurseries, Salisbury, Md., one of the largest growers and shippers of berry plants, particularly strawberries. A feature of their service is a series of seven bulletins, of eight or twelve pages each, each on the cultural requirements of one kind of berry plant. Another is carrying in stock sheets of cellophane cut to size for covering pint and quart berry boxes, with rubber bands to hold the covering. Helping a customer to better success and profits is the surest way of retaining his good will and trade.

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Texas Holds Its Best Convention

Instructive Talks and Reports of Committees' Work Yielded Profitable Information to Those at Austin Convention of Texas Association of Nurserymen — By Harvey Mosty

The thirty-ninth annual convention of the Texas Association of Nurserymen, at the Driskill hotel, Austin, September 6 and 7, proved to be the most enjoyable and profitable yet held. Over 150 nurserymen, florists and landscape men registered, and many others were present who were not members of the trade.

B. E. Williams, of Dallas, was elected president for the coming year. O. S. Gray, the retiring president, becomes vice-president, and Harvey Mosty, Kerrville, was reëlected secretary and treasurer. Members of the executive committee are Ralph Griffing, L. M. Riggs, Ross R. Wolfe, Gus Lingner, John Sarver, E. L. Baker, J. A. Bostick, J. M. Ramsey and the officers.

The meeting was called to order at 10 a. m., September 6, by President O. S. Gray. After the address of welcome by L. J. Schneider, of the American National bank, Austin, response was given by J. Frank Sneed, Oklahoma nurseryman.

President Gray gave a splendid address, and a committee was appointed to act upon some of the points stressed in his talk. Mainly they were trade barriers, credit information, truck load limits, inspection problems, grades and standards, attractive sales yards, annual nursery school and classification of state nursery inspection list.

An enjoyable luncheon was held in the pink room of the Driskill hotel, when members were entertained by the Cooke quartet in several musical numbers. Edward L. Baker, Fort Worth, acted as toastmaster for this occasion and introduced several guests. J. E. McDonald, commissioner of agriculture, gave a short address. Richard P. White, of Washington, D. C., executive secretary of the A. A. N., was introduced at this time, as were several other guests. Ninety-five persons were present.

At the afternoon session, J. E. McDonald gave some valuable information on what the state nursery inspection officials have been doing to help the nurserymen, as well as others engaged in agricultural pursuits.

L. M. Riggs, of the R. Lacey Nursery, Longview, presented something new in his talk on the use of Dowax for year-around planting. Dowax is a chemical substance that, when sprayed on evergreens, will prevent them from wilting when being transplanted.

Dr. Walter Flory, of the division of horticulture at the state agricultural experiment station, gave a valuable talk on root-growing chemicals, published in this issue.

Dr. John C. Ratsek, of the rose experiment station, at Tyler, gave some pointers on soils and fertilizers for roses. His talk was illustrated by rose bushes brought from the experiment station, showing how different varieties of soils, especially acid and alkaline, will affect their growth.

Ralph Griffing's talk on the moving of large trees, published in part in this issue, contained instructive pointers.

The dinner-banquet was an enjoyable affair, and perhaps the highlight of the evening, from the nurserymen's standpoint, was the talk on landscaping small homes, by Henry Thompson, of the Rosemont Nursery, Tyler. Mr. Thompson had colored lantern slides, with which he illustrated the good and bad in landscaping. He had some beautiful landscape photographs, as well as others that showed what not to do in landscaping small properties. The entertainment consisted of "Feats of Magic" by Dr. Carl L. Moore, Austin, and "The Man with a Thousand Voices," by Horace Perry, Austin. Either of these two would have made a most enjoyable evening, and together they provided one of the best banquet entertainments that the association has ever had.

Thursday morning, September 7, was occupied mostly with committee reports. B. E. Williams, Dallas, gave a report on nursery stock that is being grown in Texas by the state highway department. Mr. Williams, J. M. Ramsey, Austin, and Harvey Mosty, Kerrville, made trips to the various highway nurseries during the past month and obtained first-hand, authentic information on just what the highway department is growing in the way of nursery stock. Some of the figures were alarming, and a committee was appointed to act further on this report. Jac L. Gubbels, state highway landscape engineer, gave a short talk on this subject; he emphasized the facts that the highway department is only growing stock that cannot be obtained from nurserymen and that the highway department is anxious to coöperate with the nurserymen.

Perhaps the highlight of the entire convention was the talk given by Richard P. White, executive secretary of the A. A. N. He outlined the work that the A. A. N. is carrying on and urged that every nurseryman take advantage of the executive office

in Washington by becoming a member. All regulatory and congressional matters in Washington that are of interest to nurserymen are known to Mr. White long before they are the general knowledge of the public, and members of the A. A. N. learn of these matters at once. Mr. White stressed the fight that is being carried on to prevent expenditure of federal funds for the growing of nursery stock. The huge shelterbelt appropriation was defeated last year.

Dr. S. H. Yarnell, chief of the division of horticulture at the state experiment station, reviewed "New Fruit Varieties for Texas."

Ray P. Verhalen, Scottsville, disclaiming any knowledge of his topic, proceeded to give "Observations on Selling Nursery Stock" of pointed value, as appear in the excerpts from his talk, on another page of this issue.

After a report on the Houston flower show, by Mrs. Thomas B. Foster, of Houston, the remainder of the program was given over to committee reports.

E. L. Baker, chairman of the committee for amendment of the constitution, reported several changes that were recommended, the most important being the matter of dues. Dues were changed from $3 per year to a sliding scale, 50 cents on every thousand dollars of nursery stock sales made in Texas, with a minimum of $5.

New members of the T. A. N., who numbered fourteen since the preceding convention, were introduced by Secretary Harvey Mosty.

After the election of officers, the new president took the chair. Thanks and appreciation were extended to the retired president for his splendid work during the past year and for his part in making this one of the best Texas conventions ever held.

SOUTHWESTERN NOTES.

C. J. Wilson has purchased the nursery business of Hayde Bros., Kansas City, Mo. Mr. Wilson was formerly in business at Lamar, Mo.

C. A. Chandler, of the Chandler Landscape & Floral Co., Kansas City, Mo., spent several days in a hospital recently for treatment of a face infection.

Hare & Hare, landscape architects, Kansas City, Mo., are to supervise the landscape architectural work in a million-dollar park program at Dallas, Tex. This firm has done a great deal of work in Texas, as it has been consultant for the Fort Worth park system for fourteen years and has worked with the city planning and park boards in Fort Worth for sixteen years.

Regional and state officials report that shelter belt trees planted last spring average seventy-five per cent survival. The district in Reno and adjacent counties, in Kansas, has had an especially good record in regard to western yellow pine, which had been planted with some doubt in that area. Cottonwoods and other native trees are said to have shown a survival of more than ninety per cent. The reports were made by Henry Lobenstein, associate forester from the regional office at Lincoln, Neb., and T. Russell Reitz, state director, Manhattan, Kan.

The Kansas Nurserymen's Association will hold a field day at Ottawa, Kan., September 27, with the Willis Nursery Co. as host.

Z. B. Higdon, Jr., has started a nursery at Ponca City, Okla., under the name of Pine Nursery.

John Sarber, of the Sarber Nursery Co., Topeka, Kan., has been awarded the contract for landscaping the school grounds at Chanute, Kan.

SHADE TREE CONFERENCE.

The fifteenth National Shade Tree Conference, held at the Hotel Astor, New York, August 22 to 24, attracted an attendance of 500 in spite of the hot and humid weather.

Besides thirty trade displays of materials and tools used in tree work at the hotel, there was a demonstration in Central park on the first afternoon, when the Gar Wood Industries, Inc., Detroit, Mich., showed its new tree-moving unit and an assortment of model winches. Tree repair work was carried out, and large trees were sprayed from motor truck outfits by the Bean Mfg. Co., Friend Co. and Hardie Co.

The program of papers was presented as announced in the August 15 issue of this magazine, and they will be published in due time in the annual volume of proceedings.

On the morning following the conference, a large group went to the world's fair, where President Karl Dressel presented to the fair a young Sequoia gigantea, brought from California for the purpose by Edward H. Scanlon.

Next year's conference is scheduled for August 27 to 30, at Detroit, Mich. The successful event this year was to the credit of the local chairman, Norman Armstrong, and his committee.

Officers and committeemen elected to carry on the work for the ensuing year are as follows: President, Karl Dressel, East Lansing, Mich.; vice-president, E. N. Cory, College Park, Md.; secretary-treasurer, L. C. Chadwick, Columbus, O.; editor, Paul E. Tilford, Wooster, O.; executive committee, Vance I. Shield, Clayton, Mo.; legislative committee, Al G. Brown, Birmingham, Mich.; national publicity committee, P. E. Alden, Kearny, N. J.; program committee, O. W. Spicer, Stamford, Conn.; membership committee, J. F. Fox, Oyster Bay, N. Y.; F. M. Harrington, White Plains, N. Y., and P. P. Pirone, New Brunswick, N. J.

Officers and Directors of Texas Association of Nurserymen Elected at Austin.

Left to right, standing, E. L. Baker, Fort Worth; J. M. Ramsey, Austin; J. W. Sarver, Dallas; Gus Lingner, San Antonio; Ross R. Wolfe, Stephenville; Leonard M. Riggs, Longview; Ralph C. Griffing, Beaumont, the executive committee.

Seated, left to right, O. S. Gray, Arlington, vice-president; R. P. White, A.A.N. secretary; B. E. Williams, Dallas, president; Harvey Mosty, Kerrville, secretary.

Uses of Root-Promoting Chemicals

Recent Advances in Growth Substances and Uses by Nurserymen in South, Told Texas Convention—By Walter S. Flory, of Texas Experiment Station

Since the appearance in 1935 of papers by Hitchcock and Zimmerman describing the more rapid and numerous rooting of cuttings following plant hormone treatments, most nurserymen have not only become familiar with the commercial, as well as some of the scientific, literature on this subject, but many have given these root-promoting chemicals a more or less extensive trial. This paper will be devoted to short discussions of several of the most important recent advances, as we see it, in this field; to mentioning some results secured with these substances in Texas, and, finally, to some general conclusions that seem apparent.

Perhaps the most important development of the past eighteen months has been the origination of compounds carrying growth substances in a powder base. Instead of the crystals' being dissolved in aqueous or weak alcoholic solutions, they are ground and mixed with talc, agricultural clay, powdered charcoal or other suitable "dusts". These are simpler to use than solutions, because the cuttings can be dipped in dust and immediately inserted in the propagating bench. Thus, time is saved, no apparatus is needed and reference to dosage charts is avoided. Also it is claimed, and apparently with truth, that there is less chance of injury from the use of dusts, because the chemicals in them are dissolved slowly and available over a comparatively long period. Additional advantages are that the cost is low, the treatment is safer in the hands of untrained workers, the method is just as effective for many plant materials tried as when solutions are used, and a dust treatment is more adaptable for use with seeds, and in connection with transplanting, than are solutions.

A number of commercial companies and research agencies are experimenting with "hormone dusts". It is being found that growth hormone powders are more generally effective if they contain combinations of two or more growth substances in the mixture. It has been rather definitely shown that the addition of certain accessary substances to powder mixtures are rooting aids. For instance when Stoutemyer (3) added thiourea to napthaleneacetic acid dust mixtures, increases in rooting of cuttings of a number of horticultural species were indicated and increased heaviness of rooting was unmistakable. Dusts containing different concentrations of the same chemicals are being tried experimentally now and, if found feasible, will probably be offered commercially before long.

The toothpick method of treating trees at time of transplanting has given good results with pecans from 5 to 10 years of age and would seem to have promise for increasing the percentage of life of other nursery stocks of large size. This method was developed by Dr. C. L. Smith and his associates (1, 2) of the United States pecan field station at Brownwood. Round toothpicks with the points removed to give a length of about one and one-half inches are soaked in desired concentrations of indolebutyric acid alcoholic solutions. After the picks have dried they are inserted into snugly fitting holes bored in lateral roots (of more than one-half inch diameter) of the transplants. Treatment of from three to six laterals, depending upon the size of the tree, seems to be sufficient. "The concentration found to be most effective in rooting pecan trees is one gram of indole-3-butyric acid dissolved in twenty-one cubic centimeters of alcohol." When toothpicks are soaked in this solution they absorb a sufficient quantity to leave four milligrams of acid deposited in them after the picks are dried. After insertion of the picks the crystals which they contain are gradually redissolved into, and transported by, the plant sap.

Some work by Thimann and Delisle (4), of Harvard University, would seem to be interesting in connection with discussion of advances in growth substance use. Their main finding, that cuttings from young trees root much more easily than cuttings from old trees, is not new when considered alone. However, in their attempts to root cuttings they worked with three notably difficult plant groups, i.e. (1) a majority of the conifers; (2) many forest hardwoods, including oaks, and (3) apples and related rosaceous trees. They studied the effects of the following five factors on rooting of cuttings from those plant groups: (1) Age of the tree yielding cutting wood; (2) optimal growth substance treatment; (3) relative rooting behavior of different parts of the plant, i.e., lateral shoots vs. terminals; (4) rooting medium and temperature; (5) chemical factors besides growth substances, i.e., sugar and vitamin B.

One of their summary statements is as follows: "The most important single factor in rooting these 'difficult' trees is the age of the tree from which cuttings are taken. The ease with which roots are formed (on cuttings of one-year wood) falls off steadily with increasing age of the tree. This applies both in the presence and in the absence of auxin treatment." While cuttings from young trees rooted in much larger percentage following optimal growth substance treatment than without this, it was the youth of the seedling trees that made rooting possible.

A questionnaire was sent to each of eleven Texas nurserymen inquiring as to their experience and results with plant growth substances, and their response was gratifying. Ten replied in detail. Of these, five stated that their experience with the chemicals did not warrant a definite statement. I want to take this opportunity to thank all of these men for their courteous replies, and especially

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to acknowledge the specific information given by the O. S. Gray Pecan Nursery, Japanese Nursery, Mosty Bros., Verhalen Nursery Co. and Winkler Landscape Service. The information given may be summarized as follows:

One nursery had used Dr. Smith's saturated toothpick method, described above, for transplanting pecan trees. The results were "very good (so far as could be told) after two seasons' trial."

The nurseries which had chemically treated narrow-leaved evergreen cuttings had, in general, rather consistent results. Use of solutions of low concentration on both junipers and biotas gave good results for the most part, while use of growth substances in a powder carrier either was not beneficial or was harmful to conifers, with one reported exception. Podocarpus macrophylla gave good results following dust treatment.

Of the broad-leaved evergreens on which reports were given only one, ceniza (Leucophyllum frutescens), was specifically listed as being harmed by growth hormone treatments. Good results were secured from treating Ilex opaca, I. cornuta, I. cassine, I. vomitoria, Pittosporum Tobira, azalea, gardenia, pyracantha and camellia. A number of these were treated both with powder and liquid solution, and a number were reported by two or more people. One nursery stated that only unbeneficial or harmful results were secured from treating broad-leaved evergreens with growth substances in powder, but the specific genera treated were not mentioned.

Among the deciduous shrubs, hibiscus, plumbago, thyrallis and viburnum responded well to either aqueous or powder treatment. One report cited harmful effects from treating rose cuttings with weak aqueous solutions, while another nurseryman obtained good results with roses from similar treatments.

Of the other plants listed, poinsettias responded well to dust treatments, but were harmed by aqueous solutions; chrysanthemums reacted favorably to powder treatment, and geranium cuttings were harmed by growth substance whether in powder or liquid carriers.

Dr. J. C. Ratsek, of the Texas experiment station, has found that aqueous solutions of growth substances are effective in hastening rooting of Welsh multiflora rose cuttings. However, in spite of the more rapid rooting of cuttings, no difference was evident between checks and Hormodin-treated plants in the final percentage of live. One distinct advantage to be derived from treatment is the increase in the average number of roots. The greater the concentration of the growth-promoting solution, up to a certain point, the greater are the number of roots present, according to Dr. Ratsek's work.

A number of experiments with cuttings of the live x overcup oak hybrids, both with untreated and with a long series of treatments, have been carried out at College Station. From the rooting standpoint, results have so far been negative, due in all probability to the age—30 years—of the trees from which the cuttings were made. Among the plants that have responded well to aqueous treatments are citrange, vitex and crape myrtle. Cuttings of the last-named were retarded by treatments with growth substances in dusts.

While not strictly a nursery item, the work of H. E. Rea, agronomist of the experiment station, may be mentioned here. He has been securing favorable responses from cuttings of cotton, sorghum and other field crops to growth substance treatments. The value of this work will be that plant breeders and seedsmen will be able to propagate outstanding selections vegetatively. This will not only give the advantage of continuing outstanding plants from year to year, but will also not necessitate the saving of seeds for propagation of the lines.

Some general conclusions can be drawn from our present state of knowledge concerning use of growth substances. An outstanding one is that, for success, all the standard rules of procedure must be followed, and in addition, special experience and care with the chemicals used in treatments multiply the chances of good plant responses. This is another way of saying that these chemicals will usually be most valuable in the hands of experienced and careful plantsmen. All the rules, such as season of taking cuttings, length of cuttings (in certain cases), age of wood and care of cuttings, must be observed. Experience with growth substances to date indicates that softwood or semisoftwood cuttings of those plants that root fairly well without treatment respond most favorably to treatment. New combinations and concentrations of growth substances, plus increasing knowledge of correct handling methods, seem to promise the extension of more consistent benefits from use of growth substances.

STARK TALKS TO AD CLUB.

Faith in advertising, based upon its accomplishments for his nursery business, was expressed by Governor Lloyd C. Stark of Missouri in addressing the thirty-fifth annual convention of the Advertising Federation of America.

Governor Stark said that the business of Stark Bros. Nurseries & Orchards Co., Louisiana, Mo., had been built on advertising. "Within the past quarter of a century the business has more than tripled," he said, "until today we mail millions of catalogues direct to planters and have over 17,000 salesmen traveling the length and breadth of the land."

"The fact speaks for itself," he continued. "It is a powerful testimonial to the value of advertising."

The speaker scored critics of advertising, asking: "If advertising is an unnecessary cog in our national economic machinery, whence comes the highest living standard on earth in the homes of the American people?

"The critic who seeks to discount the value of advertising," he continued, "must also discount that spirit of enterprise which is part and parcel of our American heritage. Advertising represents more nearly than anything else the full flowering of that spirit, the transmutation of American initiative into material values."

In concluding, Governor Stark urged the advertising profession to be doubly vigilant today and to fight off those who would bring discredit to the industry. "Self-regulation, enforcement of a stern code of truth in advertising," he said, "is the practical solution." B. J.

CONDEMN TRADE BARRIERS.

Interstate trade barriers are condemned in a report of the Twentieth Century Fund's distribution committee, as made public in New York city. Included among features of the report is a recommendation urging "the prompt repeal of all state legislation designed to discriminate against the products of other states and to restrict the free movement of goods between the states." B. J.

Problems in Moving Large Trees

Cost of Suitable Equipment and Maintaining Trained Crew Confines Satisfactory Tree-Moving to Specialists, Told Texas Convention—By Ralph C. Griffing, Beaumont

Most trees above three inches in diameter should be handled with some type of mechanical equipment because of the weight involved and the fact that the mover is handling a living tree and a tree that is expected to give satisfaction to the person buying it. About the largest profitable size of tree, nursery-grown, would be from five to ten inches in diameter, because on trees above this size the mover runs into a multitude of complications, such as overweight, highway clearances, telephone and power lines and things of that nature, that will possibly produce plenty of headaches resulting from claims of damage and violations.

There is a saying, I believe, that "anything can be moved if you have the proper equipment." Well, this certainly applies to moving large trees, and without heavy equipment it surely is not a profitable business for anyone. These remarks I make pertain principally to conditions in which the weather will not permit freezing of the balls of soil, as is true in the north.

There are several methods of handling large trees, any one of which has its merits. I believe the most universally used method is balling and burlapping the trees. This method is, of course, dependent entirely upon the soil conditions of the locality from which the tree is moved and upon the individual skill, knowledge and equipment of the mover.

In the loading and transportation of balled trees, there are many devices, such as pans, belts, slings, skids and other means of loading these on the trucks or trailers. Possibly the most generally used method is some type of platform or pan that can be skidded up onto the truck or trailer used in transportation and then unloaded in a similar manner.

There are methods of moving trees with equipment on the principle of the small warehouse two-wheel hand truck; the tree is loaded by slipping the pan-shaped carriage under the tree, fastening the trunk onto the tongue, pulling or breaking the tree down and then towing the equipment out of the tree hole.

Other movers prefer a method of lifting and loading the tree bodily by means of chains, belts, ropes, etc., used as slings around the ball of the tree. This method, I believe, is more practical for smaller trees in that it is much quicker; however, it usually involves two trucks and ultimate tie-up of equipment.

Next we have the method of moving by means of boxing the tree roots or ball in a solid box, loading and transporting to the location. This method has some merits in that a tree may be moved out of more unfavorable soil conditions and can be handled with a little less care, because the box will stand more handling than a ball of soil. The box may be loaded by similar means, but usually is merely pulled up on the truck or trailer by means of a power winch and proper blocks and cable.

I shall stress here that the biggest asset of any tree mover is a good, heavy truck with power winch and plenty of good, heavy cable.

Now comes one of the most important parts of large-tree moving, the care after planting. More large trees die from lack of care after planting than from any other one cause. I believe that a tree, after planting, should be staked with adequate material, usually braces or guy wires, to keep the tree from moving in its position after planting and to give the new roots a chance to penetrate into the new soil. Then, too, I believe that care should be exercised in the proper planting depth of the tree; that is, never plant too deep or too shallow, because in most cases if there is over five or six inches' variation in the new and old ground levels, there is usually a retarding of growth. After the hole is filled, there should be a ring or levee of soil around the ball or box at least five or six feet from the trunk so that it can be properly watered and also can catch a great deal of rain water that falls.

I believe that a newly planted tree should have at least ten or twelve barrels of water every week or so to compensate for the loss of sap or water, because of the cutting of the roots and top. This, naturally, is dependent upon the season of the year. The first summer or dry spell is usually the hardest on a newly planted tree, because the person in whose lawn it is set feels that the tree has been planted long enough to become established and allows the levee to be removed and the sod to grow up to the tree. This, naturally, deprives the tree of its required water, and in reality that is the time when the tree needs more watering than ever.

Now, I shall get down to the part which necessarily determines the cost

Moving Large Tree with Roots in Solid Box.

of these trees. From our experience, I do not believe that large-tree moving is profitable to the average nurseryman unless he has a large quantity of trees in surplus to be moved or has enough business to buy and maintain the costly equipment and an efficient, trained crew to operate the tree-moving department. The equipment must be covered with insurance; the overload highway permits cost money; the usual repairs cost money, to say nothing of the loss of a few trees, which rapidly deducts any possible profits from the usual price charged.

One of the biggest headaches in large-tree moving is the question of replacements, which comes under the head of guaranty or insurance. Many dissatisfied customers have resulted from the fact that the man who moved the trees said they were guaranteed and then did not replace them. Of course, this is sometimes the fault of the customer because of the improper maintenance, such as cultivation, watering, etc. It is mighty hard to give a price which would include a replacement, especially in view of the fact that some customers will not give the plants proper water. And then, of course, there is the question, if the replacement tree dies, how far should one go with replacing. It has been our experience that the most satisfaction comes out of insurance at a set figure above the initial cost of the tree. This insurance should include maintenance, or at least periodical inspection and supervision, which naturally increases this cost.

I hope I have made one point clear, that large-tree moving should be handled by one specializing in this work and one who has the proper equipment and crew, so that it will make possible satisfied customers.

TO SHOW SKIP CRANE.

John C. Plumb, superintendent of Woodlawn cemetery, New York city, will project a motion picture showing the newly developed Gar Wood skip-handling crane and tell about its application to cemetery work, during the annual meeting of the Association of American Cemetery Superintendents, to be held at the Deshler-Wallick hotel, Columbus, O., September 17 to 21.

"The new Gar Wood crane handles soil and loose material in skips and speeds up jobs where hand shoveling is desirable or necessary," states G. E. Robinson, manager of the winch division of Gar Wood Industries, Inc., Detroit, Mich., who will attend the convention. "A truck can distribute twelve empty skips per load to handle the excess soil from graves. The skip-handling crane method does away with the necessity of dumping unsightly piles of soil on the side of the road and the costly operation of tying up a truck while soil is being shoveled into it. The skip crane handles 3,000 pounds at a 12-foot radius."

SPRAYERS PROVE WORTH.

The excellent condition of the horticultural features of the New York world's fair, in particular the plantings in Gardens on Parade, has been a matter of much comment. That this is not just an accident, trade members will be well aware. The maintenance task is an important and unremitting one, which calls for the most effective spraying materials and the most up-to-date equipment that will expedite the work.

Shown in the accompanying illustration is one of the much-used pieces of equipment that have proved their great value in preventing insect and disease attacks on the plantings at the fair. It is a Gold Seal Paragon sprayer, No. 3, a wheel unit. Once every week it is a routine operation to spray thoroughly each of the gardens and other plantings in Gardens on Parade. To the effectiveness of this work is due much of the excellence of the appearance of the exhibit. The entire fairgrounds are likewise kept in top-notch condition by similar attention to preventive measures. The illustration shows spraying of roses at Gardens on Parade.

Paragon sprayers are also prominent among the garden necessities on display in the commercial booth sponsored at Gardens on Parade by Andrew Wilson, Inc., which has the contract for supplying all materials, equipment, supervision and labor in connection with maintaining the horticultural exhibit and other fair plantings.

FLORIDA DAY LILY GARDEN.

What is said to be one of the five best hemerocallis gardens in the country is located on the campus of the college of agriculture of the University of Florida, Gainesville. Commercial growers from many parts of the country have inspected the plantings since they were established several years ago. In the garden are 175 named varieties and 500 seedlings, the results of cross-pollination.

The development of a beautiful new day lily, Indian red in color, by John V. Watkins, horticulturist at the university, was recently announced by Dean H. Harold Hume. This variety, a result of crossing Mikado with a wild fulvous variety from China, has been named Mrs. John J. Tigert, in honor of the wife of the president of the university. Mr. Watkins is considered an authority on day lilies and has made a specialty of breeding them. The new variety was crossed about four years ago. Since then it has been observed to evaluate its potentialities for the lower south.

Spraying Is Important Job at Gardens on Parade at New York Fair.

Observations on Selling Nursery Stock

Analysis of Experiences Reveals Reasons for Success in Business and Association Affairs of Texas Association's Past President — By Ray P. Verhalen, Scottsville

Many books are written on salesmanship in general. All larger corporations have sales schools. They call in all their men off the road and teach them over a period of three or four nights every month how to sell their products. I feel that salesmen in the nursery business are really scarce. I certainly know nothing of selling. About the only time I can make a decent sale of nursery stock is when the office wires me that there is not enough money in the bank to make a pay roll; then I scratch my head, wonder who is the most likely chap with a few dollars and wants to part with them and I simply go and book him for a few of his needs.

I have tried to analyze my own work for the past ten years to see if I could really find any fundamental starting points or methods that I have been using. I shall try to outline a few of these points. Please keep in mind that my particular selling in the past ten years has been entirely to the trade. Most of you are more concerned in reaching directly to the public, but the first thing I learned was that all the buying public was the same. Whether you are going from the manufacturer to the jobber or from the jobber to the retailer or are the retailer going directly to the public, the first real fundamental of selling is to have an unbounded faith in your product. If you don't believe your product is a little better than any of the other manufacturers' or producers', then you must have the confidence that it is at least the equal and that your price is a little better or that your service is a little better.

Many years ago a successful Holland bulb salesman gave me a tip on selling Dutch bulbs. He said after the first formal or informal meeting of the customer was over, he tried to get the customer interested in talking about some new varieties that were not yet on the market, or if they were on the market, they were very scarce and expensive. He would finally pull out a notebook and write down an order for two or five or a dozen bulbs of these varieties, or maybe make a gift to the customer of some bulbs. Once he started his writing, he kept his pad on his knee, and directly they were talking standard varieties in quantities. If he could, he let the price matter rest until he had the man's requirements pretty well written down; then he talked prices. You have to use your judgment along this line, especially with a retail customer who comes into your place of business with set ideas as to what he wants. If the customer knows exactly what he wants, it is up to you to show him the goods and book him, and then your salesmanship shows itself in adding plants which you have made him desire or, if he has no room for additional material, to change from a 50-cent plant to a $1.50 plant, especially one that has a greater margin of profit. Then you have made a good sale.

Part of your selling, of course, is your own personality. I know it is hard sometimes, when you find a bargain hunter or what we term a mean-dispositioned person, to greet him with a smile, but there is much more satisfaction in making a sale to a hard customer than there is in writing an order for an affable, non-complaining person. Personality perhaps counts more than any other one thing in salesmanship.

Neatness of place of business helps the salesman and never hinders. Take a lesson from the 10-cent stores and place your novelty goods with the greater margin of profit where they attract attention immediately; your staple items can always go to the back of the display yard. The same thing holds good if you are displaying pictures. In this day and time you do not have to have a picture of a Radiance rose, but if you wish to sell some of the newer roses, a picture well displayed helps greatly.

Another thing in selling you should never forget is that it is easier to let the customer do the talking than to make the customer listen to you, and while the customer is not always right, it is well to let him believe he is right. Do not take complaints and adjustments too seriously. Nine out of ten times when a customer complains of goods' not being up to standard or that the plants have died, a little adjustment could be made by being pleasant. I have seen a retail customer come in to a sales yard with a complaint of plants' being dead, and the nurseryman, instead of immediately granting new plants as was his custom, with a little pleasant talk about the temperature and dry weather or the cold weather, sent the customer away well satisfied after he had purchased considerable more material.

Try to read your customer's moods. You can usually tell, after five or ten minutes or less, whether your customer has a grouch on or a sick headache or is too tired to be pleasant. I have called on customers late in the evening when I was anxious to get out of that town into another one, but instead of writing an order that evening, I just greeted them and on the plea of being too tired to talk business, I have made an appointment for the next morning, fairly early. By trying to transact business with a tired customer, I might have had a $50 or $75 order that evening and been on my way, but by waiting until morning, when the customer was fresh and bright after a good night's sleep, I have been able to book him for his actual needs and interest him in several hundred dollars' worth of additional stock, which would have been impossible to do the night before.

Keep in mind your customers are only human beings just as you are. They are no better and they are no worse. They have the same family troubles and the same ambitions. They are not rich people, they are not good people, they are not poor people and they are not bad people; they are just people.

Most of your rich customers are just your equal. Some of them are not your equal. Talk to them as equals. You are the boss of your business. They may be only hired hands of a large corporation, afraid of their job. If you can approach your customer with the full confidence that you know your goods, that your goods are in prime condition and the best on the market, you will have no trouble convincing them of that fact.

AMERICAN ASSOCIATION OF NURSERYMEN

RICHARD P. WHITE, EXECUTIVE SECRETARY

636 SOUTHERN BLDG., WASHINGTON, D. C.

A. A. N. COMMITTEES.

Announcement of the standing committees to serve the American Association of Nurserymen the coming year reveals some changes, chiefly to make them more effective and representative. Eliminations and changes have taken place in accordance with the recommendations at Portland, and in some cases committees have been reduced in size.

As national chairman of the membership committee, President Owen G. Wood will take personal charge of adding to the roster during the coming year. Miles W. Bryant becomes chairman of the legislation committee, having the retiring chairman, Clarence O. Siebenthaler, among his coworkers.

The elected executive committee includes the president, Vice-president Avery H. Steinmetz, Portland, Ore., and Edwin J. Stark, Louisiana, Mo., as the members with one year to serve, together with the retiring president, Chet G. Marshall, Arlington, Neb., as member at large, and for two years, Frank S. LaBar, Stroudsburg, Pa.; Benjamin J. Greening, Monroe, Mich., and J. Frank Sneed, Oklahoma City, Okla.

The complete list of the standing committees as announced is as follows:

Arbitration:
Richard P. White, chairman, Washington, D. C.

Arrangements:
C. W. M. Hess, chairman, Mountain View, N. J.
Clinton D. Wallace, South Portland, Me.
Isaac L. Williams, Exeter, N. H.
Lester W. Needham, Springfield, Mass.
V. J. Vanicek, Newport, R. I.
Louis C. Vanderbrook, Manchester, Conn.
C. Courtney Seabrook, Bridgeton, N. J.
Charles H. Perkins, Newark, N. Y.
L. P. Akenhead, Newark, N. Y.
Fred P. Herbst, New York, N. Y.
H. C. Taylor, Tarrytown, N. Y.
George E. Hart, Lynbrook, L. I., N. Y.
Eugene Müller, Norristown, Pa.
Frank S. LaBar, Stroudsburg, Pa.

Botanical gardens and arboretums:
Robert Pyle, chairman, West Grove, Pa
Harlan P. Kelsey, East Boxford, Mass.
F. R. Kilner, Chicago, Ill.
George C. Roeding, Jr., Niles, Cal.
L. M. Riggs, Longview, Tex.
Henry Hicks, Westbury, L. I., N. Y.

Legislation:
Miles W. Bryant, chairman, Princeton, Ill.
Clarence O. Siebenthaler, Dayton, O.
Paul C. Stark, Louisiana, Mo.
Lester W. Needham, Springfield, Mass.
Paul E. Doty, Portland, Ore.
Paul V. Fortmiller, Newark, N. Y.
J. M. Ramsey, Austin, Tex.
John K. Andrews, Faribault, Minn.

Market development and publicity:
Paul C. Stark, chairman, Louisiana, Mo.
Clarence O. Siebenthaler, Dayton, O.
H. G. Seyler, Weiser Park, Pa.
George C. Roeding, Jr., Niles, Cal.
James G. Bailie, Augusta, Ga.
Lloyd A. Moffet, Fremont, Neb.
W. C. Griffing, Beaumont, Tex.

Membership:
Owen G. Wood, national chairman.
Alabama—Henry Homer Chase, Chase.
Arkansas—T. L. Jacobs, Rogers.
California—Ray D. Hartman, San Jose.
Harry A. Marks, Los Angeles.
Colorado—G. A. Tolleson, Denver.
Connecticut—Louis C. Vanderbrook, Manchester.
Delaware—Clayton A. Bunting, Selbyville.
Florida—S. B. Simpson, Monticello.
Georgia—Donald Hastings, Atlanta.
Illinois—A. L. Palmgren, Glenview.
Indiana—M. B. Esterline, New Augusta.
Iowa—W. J. Hughes, Cedar Rapids.
Kansas—Harold S. Crawford, Ottawa.
Kentucky—Walter Hillenmeyer, Jr., Lexington.
Louisiana—Sam Scheinuk, Baton Rouge.
Maine—Clinton D. Wallace, South Portland.
Maryland—Homer S. Kemp, Princess Anne.
Massachusetts—Lloyd A. Hathaway, North Abington.
Michigan—Harold Paul, Monroe.
Minnesota—C. H. Andrews, Faribault.
Mississippi—H. M. Owen, Columbus.
Missouri—William A. Weber, St. Louis.
Nebraska—Vernon Marshall, Arlington.
New Hampshire—Isaac L. Williams, Exeter.
New Jersey—B. R. Leach, Riverton.
New York—Jac Bulk, Babylon, L. I.
P. J. van Melle, Poughkeepsie
L. P. Akenhead, Newark.
North Carolina—S. D. Tankard, Hickory.
North Dakota—George F. Will, Bismarck.
Ohio—Howard N. Scarff, New Carlisle.
Oklahoma—N. D. Woods, Oklahoma City.
Oregon—E. Dering, Scappoose.
Pennsylvania—Eugene Müller, Norristown.
Rhode Island—V. J. Vanicek, Newport.
South Dakota—H. N. Dybvig, Colton.
Tennessee—Edward E. Chattin, Winchester.
Texas—L. M. Riggs, Longview.
Utah—Wallace Walton, Salt Lake City.
Virginia—Kenneth McDonald, Hampton.
Washington—W. L. Fulmer, Seattle.
West Virginia—B. L. Potter, Huntington.
Wisconsin—Thomas S. Pinney, Sturgeon Bay.

Necrology:
F. R. Kilner, chairman, Chicago, Ill.
Peter J. van Melle, Poughkeepsie, N. Y.
Arthur Champion, Perry, O.
A. J. Bruce, Des Moines, Ia.
George C. Roeding, Jr., Niles, Cal.

Nomenclature and plant name registration:
Harlan P. Kelsey, chairman, East Boxford, Mass.
J. Horace McFarland, Harrisburg, Pa.

Quarantine:
Albert F. Meehan, chairman, Dresher, Pa.
Harold S. Welch, Shenandoah, Ia.
Henry B. Chase, Chase, Ala.
Edwin J. Stark, Louisiana, Mo.
Wayne E. McGill, Fairview, Ore.
John A. Armstrong, Ontario, Cal.
O. A. Hobbs, Bridgeport, Ind.
William Flemer, Jr., Princeton, N. J.

Horticultural standards:
William Flemer, Jr., chairman, Princeton, N. J.
H. S. Chard, Painesville, O.
D. Barrett Cole, Painesville, O.
William A. Natorp, Cincinnati, O.
Louis E. Hillenmeyer, Lexington, Ky.
Paul E. Doty, Portland, Ore.
J. J. Pinney, Ottawa, Kan.

Trade barriers:
Lee McClain, chairman, Knoxville, Tenn.
Carl Lumry, Shenandoah, Ia.
Lester C. Lovett, Little Silver, N. J.
Henry B. Chase, Chase, Ala.
Paul C. Stark, Louisiana, Mo.
Ray D. Hartman, San Jose, Cal.

Trade practices and ethics:
Louis E. Hillenmeyer, chairman, Lexington, Ky.
John A. Armstrong, Ontario, Cal.
L. C. Bobbink, Rutherford, N. J.

Trade relations:
W. J. Smart, chairman, Dundee, Ill.
E. C. Welch, Shenandoah, Ia.
Peter J. Cascio, West Hartford, Conn.
Peter Cassinelli, Glendale, O.

Transportation and traffic manager:
Charles Sizemore, Louisiana, Mo.

U. S. Chamber of Commerce:
Robert Pyle, West Grove, Pa., national councilor.

PRESIDENT WOOD AT HOME.

Owen G. Wood and his family returned to their home, at Bristol, Va., August 27, after traveling in the trailer in more than two months a total distance of 10,361 miles, crossing parts of twenty states and including a short visit in the province of Alberta, Canada. The high lights of the delightful trip were, he says, the A. A. N. convention and visits in Carlsbad, Grand Canyon, Sequoia, Glacier, Yellowstone, Grand Teton and Rocky Mountain national parks, as well as pleasant visits with four A. A. N. past presidents, Edward L. Baker, Chet G. Marshall, Miles Bryant and Clarence Siebenthaler.

The new president of the American Association of Nurserymen may not be promptly recognized, as he acquired a mustache for some unaccountable reason.

"The fishing was excellent beyond my fondest expectations," he asserts, declaring, "I have and can submit pictorial evidence which makes the usual fisherman's lies unnecessary."

Excerpts from a Plantsman's Notebook

Notes Here and There on the Culture, Propagation and Uses of Many Kinds of Plants Given Garden Trial in Years Past—By C. W. Wood

During the years since I first became interested in the plant world, thousands of different kinds of plants have passed through my garden. The adventure has brought me much pleasure and perhaps a little knowledge. Part of both, the pleasure and what I like to think of as knowledge, has been recorded in notebooks, some of which have been lost, while others remain to remind me of the pleasant hours spent with problems of culture, propagation and uses of the different plants. The thought came to me recently that some extracts from these notes might interest and perhaps enlighten readers of the American Nurseryman. And with that purpose in view I shall devote our space in the next few issues to some extracts from these notebooks. Because of the nature of the project, it will be quite impossible to give them in any kind of sequence; so I shall have to ask your indulgence as we skip to and fro.

Hylomecon Japonicum.

(May 10, 1930). The little Japanese poppywort, Hylomecon japonicum, has commenced to show its value as an ornament in shady situations, especially if given a soil full of humus and an abundance of moisture. Last year it gave almost two months of bloom and is a willing doer again. From a lovely tuft of green leaves, each made up of five leaflets, it sends aloft 8-inch stems bearing 2-inch-wide yellow poppies, which are quite long-lasting as poppies go. It seems to require an ever-present supply of moisture and has done best in a leafy soil. Like most poppyworts, it resents disturbance while in a vegetative state and should be handled while dormant or in its infancy.

Senecio Tyroliensis.

(June 12, 1924). It is always exciting to come upon a pleasant plant in a race of weeds, but when one unexpectedly finds a treasure, such as Senecio tyroliensis, where nothing of special value is expected, one's joy is apt to overflow. The books tell us that this groundsel is a high alpine, growing in locations as high as 10,000 feet in the Tyrol and the Dolomites; so anyone who has had the trying experiences that I have had with S. leucophyllus, from the high Pyrenees, can scarcely believe his eyes when he sees how amiable tyroliensis can be. All that it seems to need in this climate is to be shielded from the sun during the hottest part of the day and to have a little attention during long dry periods. Some leaf mold in the soil and a root run under rocks seem to satisfy it ordinarily. The reward of shaggy heads of bright orange daisies on 4-inch to 6-inch stems over a carpet of finely divided, deep green leaves is surely something to work for. In all except the hottest parts of the country, it should give a satisfactory performance. Seeds have been tardy in germination here in northern Michigan and perhaps should be planted in an outdoor frame in autumn. Vegetative reproduction is easy from cuttings (tufts pulled away from the parent) at almost any time of the year.

Kniphofia Galpinii.

(September 20, 1937). Seeds, received last year under the name of Kniphofia Galpinii from an English friend, have this year given me a new conception of the value of the red-hot pokers. Instead of the stately growth of Pfitzeri and other favorite border species, which often reach as high as four feet under good culture, Galpinii has not yet exceeded fifteen inches, making it a splendid rock garden ornament. The leaves are as long as, or longer than, the flower scape, but they commence to droop at about the middle of their length, producing a pleasing fountain of foliage, from which emerge the stems bearing from July onward typical kniphofia inflorescences, though in this case the flowers are a beautiful pale apricot with perhaps a more decided tinge of yellow at the top of the spike. Everything about the plant is pleasing, and its make-up suits it well for rock garden planting.

(Note: The plants were carried over winter in a cellar the first year, but were overlooked last year and perished during the almost snowless winter. Such behavior is in line with all other kniphofias that I have tried in northern Michigan, with the exception of some forms of K. Uvaria, which are quite hardy, and indicates heavy mulching or, better yet, wintering in frostproof pits or cellars.)

Campanula Macrostyla.

(August 15, 1936). Another summer of drought, which brought some of the highest temperatures northern Michigan has ever experienced, has demonstrated again the value of Campanula macrostyla as a garden plant. Our thin layer of soil overlying gravel makes life unbearable for many plants unless they receive frequent irrigation during dry hot weather and it shortens the blooming period of practically everything. The latter is especially true of annuals, some of those recommended because of a long blooming habit being almost useless here because of their hurry to get their job done.

That is not true, however, of C. macrostyla, an annual from Mount Taurus, in Asia Minor. The literature would lead one to believe that it is more curious than beautiful, but experience here shows that it is decidedly worth a place in our gardens, if for no other reason than that it supplies color during the difficult month of August. It may be, though, that its peculiar color, lilac-purple, veined with violet, may not appeal to some. That brief color description does not do the plant justice, for the color deepens toward the edges of the corolla, and the prominently long and large style (hence the specific name), which is gray to brownish in color, according to its age, adds a distinguishing character to a really distinctive flower.

(Note: Not many annuals will appear in these notes, but this one holds so much promise for the neighborhood grower that it should be included in this series. Seeds started into growth in early April and grown along in pots should reach flowering state and be ready to sell in July.)

Solidago Virgaurea.

(July 10, 1915). As goldenrods are generally considered weeds, I have been interested in the reaction of visitors to a European representa-

tive of the genus, Solidago Virgaurea, which is now in bloom. It is recognizable, of course, as a goldenrod, but its bright yellow flowers in dense clusters (thyrse of botanists), as much as eight inches long, give it a garden value possessed by few others of its kind. It grows from two to three feet high, making it an ideal plant to mass behind the peach-leaved bellflower, Carpathian harebells, or similar plants. It is easily grown from fall-sown seeds or from divisions.

(August 8, 1938). A dozen or so plants, grown from seeds marked Solidago Virgaurea Golden Wings, are an attractive lot of goldenrods. Only two of them show the stately growth of four feet (it is said to reach five feet under good culture) which is ascribed to the true plant, and not all have its rich golden color. The plants now flowering give at least a hint of how beautiful and useful Golden Wings could be if it were possible to get the true thing.

(August 15, 1932). The American representative of the common European goldenrod which we know as Solidago Cutleri is a splendid little plant for the rock garden or for a dry wall. It is not often that one sees the tiny members of this genus in gardens and I never remember having seen one planted in a wall; yet this 6-inch specimen from the alpine regions in the northeastern part of the United States is an ornament during July and August, when it is displaying its more or less flat-topped clusters of golden flowers. It is a plant of superior merit which should be more generally distributed.

Saxifraga Peltata.

(June 1, 1931). A few years ago a friend with much planting space to be filled and with plenty of money to do the filling asked my advice about the planting of a stream bank. The umbrella plant, Saxifraga peltata, was recommended, and several dozen plants were purchased. I had not seen the plant for several years and then only in its native haunts along streams in Oregon, but thought it worth the gamble. This morning I went to see the planting and am as pleased as the owner in its success.

This saxifrage is a plant of noble proportions. Its flowers, either pinkish or white, come on simple scapes in early spring before the leaves and are quite inconspicuous. Its fortune is found in its leaves, all of which are basal from a horizontal rhizome and are borne on petioles as much as three feet long. The leaves, in accordance with the specific name of the plant, are attached to the stalk inside the margin and may be as much as a foot across; hence the name, umbrella plant. It needs some protection in northern Michigan if planted in exposed situations, six inches or so of leaves over the crown after the foliage dies down usually answering the purpose. It is easily propagated by division of the rhizome and, I suppose, from fresh seeds.

Asphyllanthes Monspeliensis.

(June 2, 1932). Growers of rock garden plants who are on the lookout for unusual items with which to attract customers have an ally in Asphyllanthes monspeliensis, a member of the vast group of liliaceæ. It has glaucous-gray rushlike foliage from eight inches to a foot or more high and small blue fairies at the ends of the stems. The plants are for thoroughly drained soil, preferably on the sterile side, I believe, and for a situation in full sun. Being native to the Mediterranean regions, it is not fully hardy in the north except in well protected places. It seems to be of about the same hardiness as the Californian sisyrinchiums. Propagation is by means of seeds, which germinate slowly and should be planted outdoors in autumn.

Lunaria Munstead Purple.

(May 20, 1937). After visiting many gardens I am more convinced than ever that we in America do not make enough of honesty, Lunaria annua, or L. biennis, as it is more popularly known. When it is grown at all, the large, silvery-white partitions of the seed pods, which are used in winter bouquets, seem to be the attractive part of the plant. I suspect that the quite widespread aversion to its pink-purple (perhaps magenta is nearer the mark) flowers is the cause of neglect. If so, the variety Munstead Purple, which is beautiful right now as a background for a group of yellow tulips, will answer that objection. This product of the late Gertrude Jekyll's garden is really an acquisition.

In my light soil, honesty is nearly always best when grown in part shade. The plants are more robust (incidentally, Munstead Purple is the tallest honesty I know, a height of three feet being not unusual) and the flowers are usually larger. To get large vigorous plants, seeds should be planted in early June.

Arabis Blepharophylla.

(August 25, 1938). Although the blooming season of the native Arabis Blepharophylla has long since passed, I was again reminded of its beauty and usefulness while I was taking leaf cuttings of it today. Grown from seeds, as they are ordinarily available, the colors vary from pink to almost purple, many of them being of a color quite unfit for garden purposes, but the clear pinks are among the liveliest of early spring flowers. It makes a pleasing mat of foliage, somewhat gray at first but later becoming green when the leaves lose their soft hairs, and from this spring 8-inch to 12-inch stems bearing large (an inch across in well grown plants) cross flowers in early spring.

(Note: The plant is sometimes tricky under cultivation. I am not at all sure that I know all of its idiosyncrasies, but suspect that its main need is for perfect drainage. A further report next year is promised.)

INDIANA STATE NURSERY.

The Indiana state conservation department, building up its supply of trees which farmers may plant in woodland and windbreaks, is establishing a new nursery in the Jasper-Pulaski game preserve, near Winamac, Ind.

Up to now, northwestern Indiana has had to depend upon the nursery in the Wells county state forest. Now the new nursery will take over that district and the Wells county plot will confine its shipments to the northeastern part of the state. Other nurseries are in Clark county state forest, at Henryville, and the Jackson county state forest, both in southern Indiana.

The new nursery, under the forestry division, will cover twenty-two acres and contain 10,000,000 to 12,000,000 trees, of which 1,500,000 to 2,000,000 may be sold each spring. This will give the state for nurseries altogether about seventy-five acres, with some 32,000,000 trees.

HOWARD CHARD, of Painesville, O., is now representing the Jackson & Perkins Co., Newark, N. Y., in the states of Ohio, Michigan, Indiana and Kentucky.

Beltsville Horticultural Station

Research Experiments in Nursery Practices and Plants Being Carried Out by Federal Government, Inspected by Maryland Nurserymen—By Julian J. Chisolm II

The work which the federal government is doing in the trade's interest at the horticultural station of the Department of Agriculture at Beltsville, Md., was explained to seventy-five Maryland nurserymen and growers who gathered there August 30.

Dr. Frank E. Gardner, in the absence of Dr. Auchter, chief of the bureau of plant industry, who was detained in town, welcomed the visitors and acted as chief guide throughout the day. Before starting on the tour of the grounds, Dr. Gardner gave a brief history of the station. The original land was acquired by the government seven years ago and was occupied by the station a year later. At the present time 700 acres of heterogeneous soil types, which permit the growing of a diversity of crops, are under cultivation. There are two large buildings completely equipped with offices and the latest laboratory installations. One is devoted entirely to fruit and ornamental plant problems and the other entirely to vegetable problems. A third building has just been completed, where fruit storage and transportation problems will be studied.

Seventeen greenhouses in one range are completed and in operation on various plant problems. Five large greenhouses and an enormous conservatory and show house are under construction, to house the material that is under the care of J. Wise Byrnes in the old greenhouses in Washington at Fourteenth street and Constitution avenue, which are to be demolished. To supply heat for all this glass, a central heating system is under construction.

The first greenhouse visited was devoted to a problem that had no direct bearing on ornamental material, but furnished an example of fundamental research. Here were pots of growing bean plants on little trucks that could be pushed in and out of dark chambers as desired. The purpose was to determine the reason for the response of plants to photo periods; that is, the effect of light and darkness on the growing habits of plants.

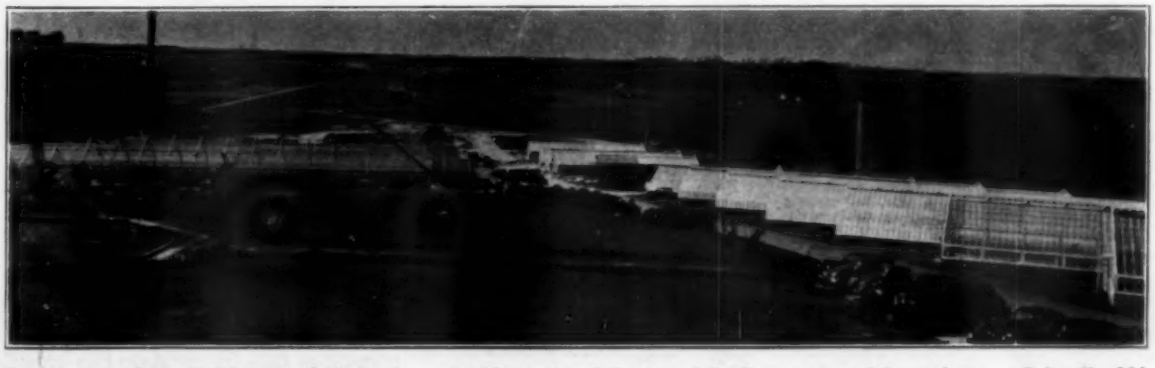
In the next house visited Guy E. Yerkes was carrying out his experiments in the propagation of ornamentals by cuttings. These experiments consisted of various methods of application of root-stimulating chemicals in the form of dusts, dips and sprays. The more familiar materials, such as indoleacetic acid and indolebutyric acid, are being used, as well as some new substances which have given evidence of some value.

Among the latter is naphthaleneacetamide, which is being tried not only as a dust and dip, but also as a spray which is applied to the leaf surfaces of the cuttings after they are placed in the propagating medium. This chemical is not so toxic to plant material, and a greater latitude is possible in the strength of the solutions used before injury takes place. Naphthaleneacetamide has given good results by all three methods of application in rooting Oriental species of magnolias, pink-flowering dogwood and hemlocks. Magnolia and dogwood cuttings root best when they are taken in early July, while the growth is beginning to harden, but before the terminal buds are well formed. It is a decided advantage to root such cuttings as early in the season as possible, for they overwinter best when thoroughly established in pots. The hemlocks produce the highest percentage of rooted plants if the cuttings are taken in midwinter.

Equally good results have been obtained with indoleacetic acid and indolebutyric acid when used as sprays, but, as in compounding the dips and dusts, great accuracy must be exercised in mixing the solutions, for the slightest excess of chemicals will cause serious and permanent injury.

Mr. Yerkes, in compounding the various solutions and dusts that have been used, varied the strength of the chemicals from .01 to .05 per cent. Where sprays were used, the concentration was five times stronger than for the dips and dusts. Because of the highly experimental nature of the work and the vast number of uncontrollable and unknown factors that enter into it, it is impossible to make any definite statement for the use of these materials on the various classes of cuttings.

In his cutting benches, Mr. Yerkes had twelve species of broad-leaved evergreens, which had been treated with the different root-stimulating chemicals in varying manners. The treatments had just been made and it was too early to see any reaction to them. Among these were Ilex cre-



Greenhouses, Farm Buildings and Orchards at the Horticultural Station of the Department of Agriculture, at Beltsville, Md.

nata and Aquifolium, Ligustrum japonicum, azaleas in variety, etc.

The statement was made that cuttings of Viburnum Carlesii, if taken while soft in late May, rooted readily when treated with either idolebutyric acid or naphthaleneacetamide as a dust or a dip or as a spray.

Dr. Gardner picked up a holly leaf off the cutting bed and called attention to a spiderlike web that was growing on the undersurface. This is a disease, only recently discovered as such, that has always been common in propagating benches, especially among the hollies. Its presence is noted by the fact that the leaves of the cuttings dry up and fall, particularly under warm moist conditions. If the fallen leaves are examined, a fungous growth is observed that covers the undersurface of the leaf like fine spider webs. This is caused by a phytophthora fungus. A number of experiments have been tried to control it without much success. Complete sterilization of the propagating house, benches and medium seems to offer the best means so far found, but even that does not give perfect control.

The next house visited contained another fundamental research investigation, to find out the exact effect the various root-stimulating chemicals had on cuttings and why. Common beans were being used, as they root readily from cuttings and contain a large amount of food, which greatly magnifies the effect of the treatment and makes it more easily determined. Young bean plants were cut off at the surface of the ground before the trifoliate leaves opened and treated with indolebutyric acid and naphthaleneacetamide as dusts, dips and sprays. In the treated plants, large calluses formed, due to a heavy accumulation of sugar and nitrogen. The sprayed cuttings, however, show less callus than those treated by the dips and sprays. After 100 hours in the cutting beds the treated plants developed a heavy and vigorous root system. These were then sent to the laboratory and a complete and exhaustive chemical analysis was made of the entire cutting. No statement was made on the results obtained.

The question was asked if any work has been done with hormones in solutions to promote healing and rapid root growth in newly transplanted balled nursery stock. It was stated that not much information is available on this process at present, but that certain U.S.D.A. experimenters were having marked success in the south in obtaining good stands of transplanted nut trees by soaking toothpicks in a strong indolebutyric acid solution and placing two or three of the picks around the main cut roots.

The Waite pear, originated by Dr. Waite before he retired from active service in the Department of Agriculture, was displayed by Dr. Darrow. It is the result of a cross between Kieffer and Bartlett and is a fruit of medium size with a flesh that is as smooth as Bartlett, but with a little tartier twang. For canning purposes, many claim it is superior to Bartlett. The tree is fully blight-resistant and consistently produces a heavy crop of fruit. For home gardens it cannot be surpassed. However, it has the disadvantage of most pears of being self-sterile, requiring the planting of a Kieffer near by to supply the necessary pollen for fertilization. Propagation material was distributed by the department last year, and the Bountiful Ridge Nurseries, Princess Anne, Md., are ready to introduce it the coming year.

Four varieties of strawberries, said Dr. Darrow, had been selected from the many thousands of seedlings originated by the department as superior to existing varieties. These are being propagated by certain commercial growers and are soon to be introduced. At present these berries are carried under number, as follows: 2267, earliest-bearing of the four; 2166, following the former; 2120, early midseason, and 2124, later than any variety now in the trade.

On display were four varieties of strawberries imported from Scotland, that are resistant to the red stele disease. These varieties, with the old American variety Aberdeen, which is also stele-resistant, will be used as a nucleus for breeding a resistant strain of berries.

The drug colchicine is playing an important part in the breeding work. This drug, derived from the seed and corms of Colchicum autumnale, the meadow saffron, has the power, when used in weak solution applied to growing plant tissue at the time of the greatest activity in the division of the plant cells, of doubling the chromosome count. When the chromosome count is doubled an entire new type of plant is formed.

A new raspberry was displayed which was developed in New Jersey in conjunction with the U.S.D.A. A limited supply of stock is available at the point of origination. So far, the berry has not been named.

Blueberries were discussed. A new variety from the original crosses of Dr. Coville has been approved by the department for introduction, and two more are up for approval. Individual berries were described as being three-fourths inch in diameter. Two of the varieties bear as late as any existing variety and one considerably later. Mention was made of the desirable qualities of the Coville crosses, Dixie and Weymouth. Heavy propagation is now in progress with these two varieties. Small plants are available, but only a few large bearing plants are in existence, as all wood possible is being used for propagation.

Dr. Mulford's early-blooming chrysanthemum strains were being tested in the next house for their desirability as commercial greenhouse plants and for hybridizing with better later-blooming varieties used in the trade.

Dr. Emsweller and Victor Lumsden were working in the next house on strains of Easter lily bulb scales, treating them at various times with varying solutions of colchicine to double the chromosomes and obtain a superior strain of lilies for the American grower. Another experiment was being

'Yerkes' Apple Stocks from Root Cuttings Planted in Early Spring.

carried on to determine the proper storage period and temperature control of American-grown lily bulbs.

The group was then taken to the field to see Guy Yerkes' experiments with apple stocks. Many years ago Mr. Yerkes conceived the idea that, due to the great variation in apple seedling understocks, by careful selection and tests specimens could be picked out that would prove of outstanding value as standard understocks for commercial varieties. Working on this theory, after some years he had a collection of specimens that showed many valuable characteristics, such as resistance to aphis, blight, crown gall, rust, etc. The next step was to propagate these specimens as clonal varieties by asexual means to obtain understocks on which to test commercial varieties. At first this was done by layering, but now it is done by root cuttings. Roots up to the size of a lead pencil or a little larger are trimmed off the parent plants during the winter and are cut in lengths of two or three inches, to be planted out in early spring about the same time as stem cuttings of ornamental stocks. The roots are planted in a vertical position with their tops level with the ground line. Ordinarily they make sufficient growth to be budded the first season, but it is advisable to hold them over until the second year, the same as seedling stock. In the fall the stock is lifted and the roots are trimmed. These trimmings form a source of supply of propagation material for the following year. During the years, many commercial varieties of apples have been worked on these clonal understocks, until now several trees are growing in the department's orchards. These trees on the clonal stocks, in all cases, are superior to similar varieties worked at the same time on the best seedling stocks obtainable.

It probably will not be many years before these clonal stocks are disseminated, and fruit tree producers will be able to supply trees of specific standards to meet any soil or climatic condition or other desired characteristic.

In another section was shown a series of fertilizer experiments with evergreens started by Dr. Gardner six years ago, to compare the effects of commercial fertilizers in various combinations and barnyard manure. Ten plots are under observation, including a check plot upon which no fertilizer had been applied. The ground used is a good sandy loam which had been planted to cover crops of peas during the summer and rye throughout the winter prior to the time the experiment started. Two years ago the original plantings had grown so thickly that it was necessary to move some of the plants. The transplanted blocks are the ones on which the experiments are continued. The point of interest is that the trees that have not been disturbed have made almost double the growth of the transplanted. In other words, it seems that in transplanting, no matter how carefully it is done, the trees receive a serious setback.

The varieties in the tests are Thuja occidentalis pyramidalis and Juniperus hibernica produced from rooted cuttings taken from a specimen plant of each variety. Picea excelsa was originally included, but as the plants were seedlings, the variations were so great that it was impossible to arrive at any definite conclusion of the effects of the fertilizer treatments and they were abandoned.

The treatments with commercial fertilizers consisted of applications of nitrogen, phosphoric acid and potash. Where used, phosphoric acid and potash applications remained constant at 800 pounds and 400 pounds per acre, respectively. Nitrogen was the variable salts and was used in amounts from 200 pounds to 600 pounds per acre with or without the other elements. The manured plot received ten tons of rotted cow manure per acre.

Dr. Gardner asked those present to pick out the block of Thuja pyramidalis which was most characteristic to type and which would be the most salable. The unanimous opinion was that the check plot contained the plants truest to type and the kind the public demanded. These trees were pyramidal or columnar in growth with one strong leader. The foliage was dense, of a rich green color and well furnished to the ground.

The trees in the fertilized blocks had lost their pyramidal habit, were broad with many leaders, and the foliage had a lush, soft appearance, thin and not well furnished to the ground. Applications of nitrogen exceeding 200 pounds per acre, either by itself or in combinations, showed a decided check on the growth of the plant and a thin and elongated foliage. An exception to this was the plot that received 400 pounds of nitrogen and 800 pounds of phosphoric acid per acre; here the trees nearly equaled the quality of the trees of the check plot.

Evergreen Fertilizer Plot, Right Original Planting, Left Moved Two Years Ago.

The trees in the manured plot had made more growth than the plants in any other block. The foliage was dark green, elongated and soft in appearance. The plants were quite broad, with many leaders, and were decidedly "biotaish" in appearance.

The statement was made that the average nurseryman was inclined to use too much fertilizer and did not keep in mind the necessity of maintaining his plants at optimum growth which was within the bounds of the typical characteristics of the plant. The same applies to permanent plantings on customers' grounds; heavily fertilized plants lose the character of their type and quickly outgrow their environs, causing an unnecessary expense for maintenance besides destroying the effect the planting was supposed to produce. Applications of nitrogen should not exceed a total of 200 pounds per acre for the most satisfactory results.

The last stop on the program was a visit to a field where thousands of

seedlings of the early-blooming spray-type chrysanthemum originated by Mr. Mulford were being grown. This work was started some twenty years ago with the idea of breeding a type of hardy chrysanthemum for the garden that would bloom well ahead of frosts. By a process of selection, only the early-blooming crosses were perpetuated. At the present time there are varieties that bloom as early as the end of July in this locality.

A few years ago, selections of these plants were sent to the outstanding chrysanthemum breeders of the country to test and to report which they considered had sufficient merit to be named and introduced as garden plants. One block in the field was devoted entirely to the varieties selected from these reports. Many were in bloom and some had been in bloom, but it must be admitted that they did not look particularly prepossessing. This, however, is no criterion that they do not have value elsewhere, as summers in this locality are tough on all kinds of plant material.

In addition to these, there were many thousand unnamed seedlings that yet remain to be tried. The colors ran from white through various pinks to red, yellow, lavender and bronzes. Some were in bloom, and many were not. The majority were of the low, bushy habit that is most desirable for garden planting.

PORTLAND ROSE GARDEN.

Before the city council of Portland, Ore., August 28, appeared members of the Portland Rose Society, Rose Festival Association and Garden Club, to ask that Portland make its international rose test garden in Washington park "fact rather than pretense," in the words of the Portland Journal.

Specifically they proposed for the budget $7,500 to improve the rose test gardens, recently object of criticism by the American Association of Nurserymen and the officers of the American Rose Society. They asked for betterments of Washington park. They pointed out that plans originally made have never been carried to completion. "And all they say is true," declared the newspaper. "And if Portland wants to keep international rose test gardens, the city must make good."

ROSE SOCIETY TO MEET.

The annual meeting of the American Rose Society will be held at the Brooklyn Botanic Garden, Brooklyn, N. Y., October 5 and 6. Headquarters will be the Saint George hotel, Clark street, Brooklyn, where registration will take place on the morning of October 5. This will be followed by a round-table discussion led by E. L. D. Seymour, horticultural editor of the American Home. S. R. Tilley, of the Brooklyn Botanic Garden, will tell about his culture of roses there.

There will be a luncheon at the hotel, after which the members will proceed to the Brooklyn Botanic Garden for a tour of the rose garden and grounds.

In the afternoon, there will be a meeting in the auditorium of the administration building of the garden, with addresses by Dr. C. Stuart Gager and Dr. Montague Free.

The annual dinner will be held at the Saint George hotel at 7 p. m., with President Kirk as toastmaster and Richardson Wright, editor of House and Garden, and Nelson Miller Wells, landscape architect, as speakers.

The morning of October 6 will be taken up with a trustees' meeting and the annual meeting, both to be held at the Brooklyn Botanic Garden. After luncheon the members will make a pilgrimage by busses and cars to gardens and nurseries on Long Island.

October 7 has been designated as American Rose Society day at the world's fair, and the members will gather there at 11 a. m. for a view of Gardens on Parade.

R. Marion Hatton, Sec'y.

HARDY ASTER DISPLAY.

The appearance of the first flowers on the hardy asters indicates that, from September 16 on, the New York Botanical Garden, Bronx park, New York city, will have a magnificent display consisting of more than 2,500 plants at the peak of their bloom. They will continue in full flower until the end of the month, and some varieties will remain well into October.

Michaelmas daisy is the name which the British have given to the garden forms of this native North American flower. It is largely the British who have been developing it, through selection and hybridization, into decorative new forms. At the New York Botanical Garden may be seen more than sixty varieties, from the dwarf types recently developed especially for bedding to the gigantic New England aster in rose-colored

forms. Some of the plants stand eight feet high and spread over four feet of space.

One of the showiest of the asters at the garden is an especially fine form of Aster spectabilis, discovered by a member of the staff a few years ago while on an expedition in the southeast. It is one of the first to flower and it remains in bloom until nearly the end of the season. The clear lavender rays are almost an inch in length, making each flower head two inches across.

Other early bloomers include Lady Henry Maddock, a dwarf, pale pink variety; Snowdrift, four feet tall, its white flowers delicately tinged with pink, and Barr's Pink, a large plant of the type of the New England aster with flowers of vivid rose. Aster tibeticus, a recently introduced species from Asia, opened its white flowers in the border early in September.

Some of the outstanding hybrids in the garden's display include Mrs. George Munro and Silver Spray, both with white flowers; Perry's White, whose small flowers have large yellow centers; Queen Mary and Robert Parker, pale lavender; Aldebaran, a deeper shade; Red Rover, and Royal Blue.

Coming into bloom toward the end of September will be such choice varieties as Marjorie, a dwarf form; Countess of Dudley, eighteen inches high, and Daphne, thirty inches, all of a delicate lavender-pink; King of the Belgians, four feet tall and pale lavender; Viola, which has spirelike panicles of bloom; Pink Progressive, and Skylands Queen. One of the latest, also one of the tallest plants in the border, is Aster Curtisii, a lavender-flowered native of the southeastern states.

Before the asters are through flowering, the dahlias near by will begin. The collection includes some 400 different kinds, which will be in flower from late September through October, or until killing frosts.

Then the hardy chrysanthemums will display their blooms; there are 3,500 plants in seventy varieties grouped in two long borders.

Trade Meetings

DYBVIG ENTERTAINS.

About forty nurserymen from surrounding states were entertained by the Dybvig Nurseries, Inc., Colton, S. D., at a field day, September 6. Other nurserymen who might have been present were busy with fall fairs or autumn lists.

In the morning there was first a tour of the Baltic branch of the nurseries, where the visitors were treated to watermelons. Then an hour was spent in viewing the home nursery. Visitors were lavish in their praise of both places, finding them cleanly cultivated and containing a relatively high percentage of young stock. The nursery on the Sioux river bottom, of 155 acres, is quite flat and is bordered on two sides by the river and the large trees on the north, giving ample protection. A block of 35,000 Juniperus scopulorum was perhaps the greatest attraction.

In the afternoon about thirty persons were taken on a tour of the shelter belt plantings in McCook and Davison counties. The plantings proved to be of interest to the nurserymen, and some were of the opinion that if the shelter belt activities were restricted to areas such as those visited, they would be of help to the nursery business rather than a detriment.

At noon the visitors were served a dinner of fried spring chicken with all the trimmings by the Dybvig family in the First Lutheran church parlors. At the dinner Mr. and Mrs. Nels H. Dybvig were honored guests. Mr. Dybvig founded the nursery, which is now carried on by his son, Henry N. Dybvig, and his family. A number of visiting nurserymen were called on for short talks, including Chet G. Marshall, C. C. Smith, J. R. Weir, J. O. Howard, Thomas E. Cashman, Jr., George Gurney and Frank Fisher.

Among those present were C. C. Smith, Sherman Nursery Co., Charles City, Ia.; J. R. Weir and L. A. Moffet, Plumfield Nursery, Fremont, Neb.; George and Sidney Gurney, of Yankton, S. D.; Chet G. Marshall, Marshall Nurseries, Arlington, Neb.; J. O. Howard, Shenandoah Nursery, Shenandoah, Ia.; H. S. Welch, of Mount Arbor Nursery, Shenandoah, Ia.; Andrew Kubiatowag and Thomas E. Cashman, Jr., Cashman Nursery, Owatonna, Minn.; Albert Schulze, Schulze's Greenhouse & Nursery, Pipestone, Minn.; J. W. Ross, Milbank Greenhouse & Nursery, Milbank, S. D.; Frank Fisher, Sunset Nursery, Sioux City, Ia.; Karl Grear, Grear's Greenhouse & Nursery, Luverne, Minn.; Soren Ronholm, landscape architect, Sioux Falls; A. R. Toothaker, Morningside Nursery, Sioux City, Ia.; R. W. Davidson, Hastings, Neb., besides representatives of the state and federal forest service.

MAIL ORDER MEETING.

The fall meeting of the National Mail Order Nurserymen's Association was held September 8 at the Wayland Dahlia Gardens, Wayland, Mich., and Richards Gardens, Plainwell, Mich. One of the outstanding features of the meeting was the gorgeous display of honor roll dahlias supplied by John Zent, of the Wildwood Gardens, Grand Rapids, Mich., which was staged in a beautiful setting in one of the showrooms of the Wayland Dahlia Gardens. After viewing these dahlias, members were driven through the fields, where 420,000 dahlias were in full bloom. After this drive members proceeded to Plainwell and viewed the fields of more than 7,000,000 perennial seedlings as well as the wonderful phlox and delphiniums grown by Mr. Richards. Then all were served a dinner of battery-fed chickens at the Red Brick Tavern.

The attendance was about forty-four, many with reservations having been unable to reach the meeting.

MISSISSIPPI MEETING.

The Mississippi Nurserymen's, Florists' and Landscape Gardeners' Association held its first annual convention, at the Heidelberg hotel, Jackson, Miss., September 6.

Officers elected were P. A. Wodham, Newton, president; Herman W. Owen, Columbus, first vice-president; W. W. Broome, Vicksburg, second vice-president, and F. S. Batson, Mississippi State College, secretary-treasurer. On the executive committee were elected Lindsey Cabaniss, Jackson; W. F. Adams, Sr., Gulfport, and J. B. Beale, Greenwood.

A flower show and design school were features. Many Jackson citizens attended; so did many visitors from different parts of the state.

William L. Cabaniss, Jackson, directed the design school. R. O. Monosmith and Mr. Batson directed the horticultural and landscaping session.

It was decided to hold a growers' clinic and school at State College in the spring.

OREGON FALL MEETING.

The autumn meeting of the Oregon Association of Nurserymen will be held at the Heathman hotel, Portland, Ore., October 11. The all-day program will begin at 9 a. m. While the subjects discussed are more or less of a local nature, visiting nurserymen from other states are cordially invited, states J. E. French, secretary.

WASHINGTON NOTES.

Thirty members of the Washington State Nurserymen's Association and their wives enjoyed their first annual picnic at the Strander Nursery, August 31. The unanimous opinion was: "Let's have more picnics."

The bulb growers of the Puget sound area are harvesting a bountiful crop of bulbs.

A. S. Hill, of Richmond Beach, recently acquired additional acreage near Pacific City, Wash., to increase his bulb planting.

Endre Ostbo, rhododendron and azalea grower, also grower and propagator for the University of Washington arboretum, Seattle, visited Mount Vernon and Vancouver recently. He has a remarkable planting of heather. A new variety, J. D. Hamilton, with its beautiful delicate foliage, pink flowers and not a trace of purple, is going to be popular.

Charles Pearce, of the State Flower Nursery, Bothell, Wash., is making favorable progress after a major operation.

Frank Bonnell, son of the late J. J. Bonnell, who was in charge of nursery and plant operations at the University of Washington and the arboretum, has resigned there and is completing details in purchasing the J. J. Bonnell Nursery.

R. R. Williams, of the Puget Sound Nursery, Tacoma, Wash., has just returned from a visit throughout the state, visiting nurserymen.

CO-OPERATE FOR SAFETY.

A movement for closer coördination among garden clubs, automobile associations, landscaping and parkway officials in many communities to curtail traffic accidents has been announced in New York. Principal interest is in old streets where trees and shrubbery obstruct drivers' vision.

Listed as coöperating in the movement are the Garden Club of America, Horticultural Society of New York, Yale University bureau for street traffic research, safety committee of the General Federation of Women's Clubs, National Safety Council, American Rose Society, Northwestern University traffic institute, American Association of Nurserymen, American Association of Motor Vehicle Administrators, Eastern Nurserymen's Association, Florists' Telegraph Delivery Association and National Shade Tree Conference. B. J.

From Scientific Sources

Facts of Practical Value to Nurserymen Found in Recent Publications on Research Work Being Done at Various Experimental Institutions

FRUIT SEED GERMINATION.

Recent experiments by I. C. Haut, of the Maryland experiment station, College Park, Md., to determine certain factors which may affect the afterripening and subsequent germination of fruit tree seeds, brought out much valuable information, which is told in bulletin 420, "Physiological Studies on Afterripening and Germination of Fruit Tree Seeds," issued by the Maryland experiment station.

Seeds of the McIntosh apple, Elberta peach and Mazzard and Mahaleb cherry were used in the experiments. These seeds were harvested and divided into two lots. One lot of the seeds was placed in sand and held at moist room temperatures, while the other lot was held at the same temperature, but allowed to dry for a period of six weeks. The dried seeds were then soaked for five days in moist sand. After this soaking, both lots of seeds were placed in a low temperature chamber and afterripened at temperatures of 1 to 2 degrees centigrade.

Germination tests were made at regular intervals during the afterripening process. Tests were made at 10-day intervals for the peach and Mazzard seeds, 7-day intervals for the apple seeds and 14-day intervals for the Mahaleb seeds. Eight tests were made of the Mazzard and apple seeds and six tests of the Mahaleb seeds.

Preliminary tests had shown that germination of peach and Mazzard seeds may be delayed or prevented by the mechanical resistance offered by the endocarp; consequently, fifty of the peach seeds and one-half of the Mazzard seeds had the endocarp removed.

The results of the experiments showed that seeds stratified at low temperatures do not afterripen, but that afterripening occurs when the seeds are stratified in sand held at approximately maximum moisture capacity. However, germination is reduced somewhat below the maximum. If the seeds are allowed to dry upon afterripening, the viability is reduced; also, restratification of such dried seeds results in low germination.

Temperatures of 2, 3 and 8 degrees centigrade were found effective for the afterripening of the seeds used in the experiments.

Afterripening periods of sixty days for apples, seventy-five days for peach, eighty-eight days for Mahaleb and 100 days for Mazzard at a temperature of 3 degrees centigrade resulted in high germination.

STORING ELM SEEDS.

Among the many seeds that will live only a short time when stored in the open air are those of the American elm, Ulmus americana. It has been the common practice to plant these seeds as soon as they mature, which is usually in early summer. This results in the seedlings' being greatly impaired by summer drought and heat, and it is necessary to protect the tender seedlings at the beginning of cold weather in the autumn.

Recent experiments conducted at the Boyce Thompson Institute, Yonkers, N. Y., by Lela V. Barton, have shown that it is possible to store elm seeds in sealed containers for sixteen months without losing their viability. These containers were kept at a temperature of 5 degrees centigrade or lower. However, as different lots of seeds vary greatly in their initial germination capacity, the storage keeping rates will vary accordingly.

It was further determined that elm seeds will germinate well in moist, granulated peat moss at controlled temperatures of 14, 20 and 25 degrees centigrade. No pretreatment was necessary at these temperatures, but presoaking in water for twenty-four hours, as well as pretreatment in moist granulated peat moss at 5 degrees centigrade for one month, resulted in greatly increased seedling stands in the greenhouse.

CEDAR-APPLE RUST.

The cedar-apple rust and cedar-hawthorn diseases are becoming a major problem in nurseries and on public and private grounds, where susceptible species and varieties of crab apples, flowering apples and hawthorns are planted in close proximity to susceptible varieties of red cedar. The close association of these two alternate host groups of cedar-apple and cedar-hawthorn rust fungi permits the increase in number of infestations year after year until considerable injury results to the tree.

One of the most effective methods of controlling the rust is to remove one of the host groups, preferably the red cedar, and its susceptible varieties to a distance of one mile from the crab apple or other host trees. The method can be practiced in orchards and street plantings, but in a nursery with limited space for growing a large assortment of trees it is not practical, and in some cases it is impossible. Then, too, adjacent property owners may be growing one or the other of the host plants.

The use of more resistant varieties of flowering apples, crab apples and hawthorns and more resistant varieties of red cedar, when planting these two tree groups near to each other, is also effective.

A third method, as reported by F. C. Strong and E. J. Rasmussen, in the quarterly bulletin of the Michigan experiment station, East Lansing, for May, 1939, is by the use of fungicidal sprays applied to one or the other, or both, of the host groups. J. D. MacLachlan and I. H. Crowell, in the journal of popular information of the Arnold Arboretum, report a successful spray program for the control of these diseases in the vicinity of Boston, using sulphur spray at the proper time of the year on each host group.

The Michigan State College, in trials in the vicinity of Lansing, Mich., during the summer of 1938, sprayed eighty-one red cedar trees of different varieties with Dow Mike, a wettable sulphur. This sulphur was used alone and in combination with different stickers. An equal number of unsprayed trees of all varieties were held as controls.

Applications were made at 3-week intervals, beginning June 15 and continuing until September 8. A total of five applications was made. Since at least twelve months must elapse from the time of infection until galls become visible on the red cedar trees, it has been impossible at this time to determine how effective these spray treatments have been in controlling the disease.

The various stickers used were soybean oil, one quart to six pounds of Dow Mike sulphur; soybean flour, three pounds to six pounds of Dow Mike sulphur, and Orthex, one pint to six pounds of Dow Mike sulphur. In April, 1939, the foliage of trees of Juniperus virginiana Burkii sprayed with the mixture using soybean oil

turned yellow, and Juniperus virginiana Canaertii sprayed with the same mixture showed a slight amount of yellowing of the foliage. In comparison with the control trees, all other mixtures of Dow Mike sulphur, including the sulphur alone, caused no apparent injury.

According to Strong and Rasmussen, sulphur injury is associated with high temperatures. Since weather conditions in 1938 were unfavorable for sulphur injury, no definite conclusions can be drawn as to possible foliage injury by wettable sulphur. However, it is emphasized that soybean oil cannot be recommended as a sticker for wettable sulphur sprays on red cedar since it caused distinct injury to foliage of two varieties.

QUINCE RUST ON APPLES.

A survey made in 1932 by the United States Department of Agriculture to determine the susceptibility of apple varieties to quince rust found the disease only in Maryland, Virginia and West Virginia. Since this was the first record of the occurrence of the rust on apples in these states, the general limits of the infection were determined. In 1932 and 1936 the area was resurveyed and the extent of the infected area determined for each year.

By 1934 the rust had spread northward into Pennsylvania and southward as far as Bedford, Va. In 1936, in addition to previous areas, it was observed in two different areas west of Romney, W. Va., and south toward Roanoke, Va. The 1938 survey found the disease for the first time in an orchard near Blacksburg, Va.

From the basis of these observations it might be assumed that there has been a gradual extension of the disease, but this is not the case. The fungus that causes the disease has been known to be in these areas on members of the rose and juniper families for a long time. Once this fungus has become established on junipers it may bear spores every year for twenty or more years. The rust on apples is limited to the young fruits, which are usually susceptible only during a period of about twelve days. Unless the susceptible state of the apple fruits coincides with the period of spore dissemination, there will be no infection.

Infection will not occur in apples set so early that they reach the resistant stage before the spores are disseminated.

It is possible that these fluctuating factors have not only influenced quince rust occurrence, but they have also held this disease in check. When all conditions are favorable for infection the disease becomes of economic importance.

TO DELAY FRUIT BLOOM.

John W. Blachly, of Oklahoma City, Okla., during the past two years has been making extensive research studies and experiments to endeavor to delay the blooming of various fruit trees, thereby preventing destruction by early frosts, according to the May bulletin of the farm chemurgic council.

In September, 1937, a review of the literature was commenced relative to dormancy of fruits, more particularly that of the peach. These studies were started originally for use in plant breeding in the hope that they might be of some value in crossing peach varieties to secure a superpeach that would bloom late enough to miss the spring freeze. Notes from this data showed that there might be another way to make Oklahoma peach trees bloom late enough to miss these spring freezes.

In February, 1938, a water extraction from dried peach leaves, injected with a hypodermic needle near the base of blossom buds, apparently checked these buds' development four days behind the normal bloom of the tree. In the spring of 1939 three limbs on two peach trees (one an Elberta) were inoculated with water solution from dried peach leaves so any translocation tissue could take up the solution.

These inoculations were done at different dates, but in all these experiments the bloom on the inoculated limbs lagged ten days to two weeks behind the rest of the bloom of the trees, One bloom near the point of inoculation in one test was four weeks later than the first bloom of the tree, All these inoculated limbs have a good set of fruit.

RHODODENDRON PESTS.

Two new rhododendron pests are becoming established here and there in the southern areas of New York state and New England. Their description and control are briefly given by E. Porter Felt, of the Bartlett Tree Research Laboratories.

The first is a rhododendron white fly which produces a yellowish mottling on the upper surface of the leaf and in some varieties a rolling of the leaf margin. The young of this insect are greenish, semitransparent, oval in shape, greatly flattened and about one-sixteenth inch long. They frequently occur in irregular clusters and produce considerable amounts of honeydew followed by the development of sooty mold. This insect does not injure varieties with thick leaves or those with hairs or scales on the underside of the leaves. Infested rhododendrons have been found in a number of localities within 100 miles of New York city. It has been recorded from a number of eastern and Pacific coast localities.

The pale whitish maggots of the rhododendron midge develop in the young leaves of rhododendron in May or June and again when new growth starts in August. They produce swollen greenish-yellow marginal rolls, marked later with brownish spottings which may develop into nearly complete browning of the

young leaves. The general appearance is most suggestive of a leaf spot, and usually the maggots have escaped before the trouble is noticed. It was at first supposed to be caused by a fungous disease. This insect, like the preceding, has a local distribution in the east. There are no reports of its occurrence in more distant localities, though this latter is probable.

The most promising control for the white fly is spraying in the early autumn or in the spring with a summer oil-nicotine combination, making the application to the underside of the leaves. The most effective check for the midge is probably a nicotine-soap and molasses combination applied just after the new growth starts in spring or midsummer. This spray is advised only for localities where the pest has become established.

NEW EASTERN ARBORETUM.

An arboretum is being constructed by Columbia University's department of landscape architecture at Nevis, Irvington, N. Y. This was formerly the estate of the Alexander Hamilton family and now is the big garden of Columbia University.

The Hamilton Arboretum, as the development will be known when the landscaping of its sixty-eight acres is completed, will have a series of gardens, each showing the arrangements of specific plants.

"We have the good fortune to be working with a garden 200 years old that already has 2,640 trees growing in it," Prof. Hugh Findlay, head of the landscape architecture department, announced. "The teaching of landscape architecture will be made easier because the students will be able to acquaint themselves not only with a great variety of plants, but also with new forms of gardens."

Included in the arboretum will be a small valley of hawthorn trees, a portion devoted entirely to shrubs, a grove of evergreen and crab apple trees and a space for experimental buildings. There also will be an orchard, a natural planting of dogwoods, a rose garden, a perennial garden, a winter garden, a grove of rare trees and pools and water gardens of formal and informal design. B. J.

JOEL McMILLION, graduate of Clemson College, S. C., is manager of Virginia Tree Farms, Woodlawn, Va., reports E. W. Jones, proprietor.

New Books and Bulletins

BIOLOGY TO THE RESCUE.

One can easily form a mental picture, after reading "Bio-Dynamic Farming and Gardening," by Ehrenfried Pfeiffer, of the scientific eyebrows—or perhaps the eyebrows of scientists would be a better term—which were raised when the book was published in this country last year. Being no scientist, my own did not go far above their normal plane, yet some of the author's statements, as that in which he recommends the planting of nasturtiums in the orchard or among fruit trees to protect the latter from the ravages of aphis, caused a slight arching of that facial feature. Notwithstanding that and several other positive statements of a controversial nature which will have to be proved under actual practice in this country, the book is thought-provoking for persons interested in the soil and what comes from it.

As the title implies, the book is based largely on the biological processes which enter into the creation and maintenance of soil fertility and into plant growth. Following the conclusions of Darwin, who showed years ago that there would be no soil were it not for earthworms, the author lays particular stress on the value of these organisms, claiming that the continual use of machines for deep tillage brings about the destruction of these beneficial agents and thereby eventually defeats the purposes which they are supposed to serve. For the same reason and also because it destroys soil bacteria, which in turn brings stagnation to the life processes in the soil, he condemns deep plowing.

His conclusions regarding pest control are rather disconcerting at times, but the inquiring mind will withhold final judgment until trials have shown them true or false as the case may be. "Instead of using poisonous copper, lead and arsenic preparations," he says, "the pest can be attacked in a biological way." And then he goes on to cite examples of the "biological way," as when tomatoes, sage and a few other plants are intercropped with cabbage, because these repel the cabbage fly, and when tomatoes are planted in the asparagus bed to control the beetle which preys on that crop.

The chapter on combination planting of vegetables was one of the most intriguing to me and will lead to endless experiments. A study of plant associations in nature long ago convinced me that certain plants having a harmful effect on some close neighbors may be beneficial to others. Moving along these lines, the author shows that a few plants of German chamomile growing in a grain field is helpful, while, if it is present in large numbers, it has an inhibiting effect. "Mutually beneficial," he says, "when grown alongside one another are leeks and celery, carrots and peas, early potatoes and corn, cucumbers and beans, cucumbers and corn, kohlrabi and beets, onions and beets, early potatoes and beans, tomatoes and parsley." There are many harmful combinations, but these must await your reading of the book, though one more particularly felicitous association, wherein "radishes with chervil as border plants have an excellent flavor," according to the author, should be cited.

The foregoing merely skims the surface of one of the most exciting books on plant culture of recent publication. The approach to these problems from the biological standpoint holds much promise for the future of agriculture and of horticulture. To say that it is the last word on the subject would be preposterous; to say that it is all to be accepted as fact without further proof would be foolhardy, but to reject it because it does not fall into the grooves of our present thought channels is equally absurd.

C. W. Wood.

BULLETINS RECEIVED.

"Landscaping the Home Grounds," extension bulletin 199 of Michigan State College, by C. P. Halligan, presents in sixty pages, with illustrations, suggestions to the home owner for the better development of his grounds. A few pages are devoted to the general plan, then considerable space to the construction and care of lawns, and the latter half to recommended shrubs, trees and perennials of the kinds readily available and suitable for Michigan conditions.

"Thrips of Economic Importance in California," issued December, 1938, as circular 346, by the California experiment station, Berkeley, and written by Stanley F. Bailey, tells of the economic importance of various species of thrips, of which nearly every important species is present in California. The bulletin

discusses the general biology, distribution, injury and methods of control of each particular species. Of special interest is the discussion of the flower thrips, which cause malformation of nursery stock.

"The Native Elm Bark Beetle in Connecticut," by B. J. Kaston, bulletin 420 of the Connecticut experiment station, New Haven, issued February, 1939, is a discussion of the life history and habits of the elm beetle. Also discussed are the natural factors of control, such as temperature, moisture, competition, predators and parasites. According to the bulletin, predators and parasites appear to have little effect on the control of this pest, the best natural control being dryness and competition with other elm insect larvæ.

"New Chrysanthemums," bulletin 528 of the United States Department of Agriculture, issued May, 1939, lists the new varieties of chrysanthemums originated by the department. Varieties described are Algonquin, Amoskeag, Barnegat, Geronimo, Manantico, Muskogee, Matawan, Otsego, Pohatcong, Passumpsic, Seminole and Suwanee. The method of dissemination of these new varieties by coöperating nurseries is also told.

"Some Symptoms of Citrus Malnutrition in Florida," bulletin 335 of the Florida experiment station, Gainesville, by A. F. Camp and B. R. Fudge, discusses the specific relationship between nutritional requirements and certain symptoms exhibited by the citrus tree. Nutrients discussed include copper, zinc, manganese, magnesium, nitrogen, iron and boron. The use of zinc as a remedy for frenching and copper for dieback is discussed.

"Commercial Fruit Tree Spraying," bulletin 5 of the British Ministry of Agriculture and Fisheries, London, England, is a discussion of the methods and costs of spraying fruit trees and orchards in England. The topics of discussion include spray programs, quantities of wash, spray damage, methods of spraying, machinery and plant, total cost of spraying and dusting and atomization. Of particular interest is the discussion of a central spraying plant with underground pipes to conduct the spray material to the location to be treated. The bulletin may be obtained for 45 cents from the British Library of Information, 50 Rockefeller Plaza, New York.

Sight-Seeing in Mexico

Impressions of Plant Life and Landscape Seen on Nurserymen's Automobile Trip

After covering 8,000 miles on a 4-week automobile trip through the northwest, to attend the A. A. N. convention, members of the firm of the Griffing Nurseries, Beaumont, Tex., decided, on the way home, to take another ten days to visit Mexico. W. C. Griffing, Ralph C. Griffing and wife, Maurine M. Griffing, and Miss Sibyl Gunter, of Beaumont, and Miss Wilma Gunter, of Houston, made up the party. Upon their return to Texas through El Paso, a decision was reached to drive down the Rio Grande river, and at Laredo the party embarked for Mexico, August 3. Some of their impressions are told by Miss Wilma Gunter, as follows:

"We got our passports and credentials lined up in Laredo, and away we drove across the bridge of the Rio Grande river. On the bridge we opened up for full inspection of the Mexican officials our baggage and car compartments. They let us pass after about two hours of waiting in line. Many other people decided to make the trip the same day, some 300 cars going by.

"Across the border, we took the new international hard-surfaced highway passing through Mexico from Nuevo Laredo to the southern coast of the country. The scenery from the border for the first fifty or seventy-five miles was about the same as all along the Rio Grande, bleak flat plains with a few mesquite and cacti. Then suddenly we approached a mountainous section, where we began climbing to a peak of over 600 feet, to arrive at the first American tourist café, at 1:30 p. m. and plenty hot.

"At Powers', the popular stopping place for tourists, we joined the crowd for our first lunch in Mexico. The menu was written in Spanish with translations in English for our benefit, and we found the food and drinks quite refreshing. It was there that we got our first lesson of the leisure with which people must travel in Mexico. 'Take your time,' they say, and it took at least an hour or two for lunch to be served. While we expected food as in our Mexican restaurants in Texas, we were surprised with baked chicken and cabritto (goat) meats.

"We drove on to Monterrey, some 145 miles from the border, stopping en route for a second and third inspection of baggage. Within the city, an efficient guide directed us to points of interest. We climbed several mountains by the time we reached Monterrey and welcomed the cooler weather which we found there.

"After leaving Monterrey, we drove on for a number of miles and reached a section where citrus groves were quite prominent. Many small nurseries were found along the way, where citrus and fruit trees were produced.

"In the tropical section, palm forests were found in native formation, thick and tall, similar to the pine forests of east Texas. Other varieties of trees were found—the large specimen mimosa thirty feet high with a trunk two feet through; the bananas in native groups along the roadside, some laden with fruit; the yucca; the cactus, varying in color of foliage and flowers; the mangoes, and many other tropical species. One of the native trees of Mexico, we noticed too, was the marijuana, which is used as decorative shrub or tree in highway plantings.

"Another interesting scene along the highway was the large fields of century plants, Agava americana, or as the Mexican calls it, maguey, from which a Mexican drink is made in that area and from the foliage of which a fiber is obtained for many purposes.

"After driving 500 or 600 miles into Mexico, one has reached an elevation of approximately 8,000 feet, and from there on into Mexico City, the terrain is mountainous. The trees and flowers vary from those of the tropical region. However, in the lower valleys of the mountainous areas, the orchid is found in many varieties.

"When the 150 miles of high mountains are covered, Mexico City is reached. The city is located on a plateau, with an approximate elevation of 10,000 feet, and is surrounded entirely by mountains. The view of the city from an approaching hillside

is a beautiful sight, the city in the valley below nestling within the shade and flowering trees.

"While Mexico City is thickly populated, having one and one-half million people, and its area is congested, in recent years new modern subdivisions have appeared, where the homes have more space and the general architectural arrangement has a modern air.

"While in the city it was our pleasure to meet and visit with several nurserymen, the superintendent of the parks of the federal district and others interested in landscape development. We visited the parks of the city, the growing grounds of the park department and the federal nurseries, where we found millions of shade trees growing for park and state plantings for reforestation and street plantings.

"The temperature is even the year around, and for that reason the beautiful flowers last long. Many varieties of plants found in our own section were noticed there, while many unusual and interesting varieties of trees, shrubs and flowers were seen, some native and others from other countries. The thunder-tree is used extensively as a shrub and as a standard shade tree along the streets; this, to our surprise, was no other than our Ligustrum japonicum, just locally named thunder-tree in Mexico.

"For climate, color, tropical beauty and hospitality, Mexico City is surpassed by no city we have visited. However, we were urged to see more of the tropical beauty in the southern part of the state and along the coast. But our visit was limited to the southern capital of Mexico, Cuernavaca, Morelos, where we spent a day, visiting the famous Borda gardens, Cortez Palaca and other historic points. En route we visited the colorful floating gardens at Xochimilco, taking a ride down the gardens and admiring the floral beauty on the place. In the small gardens, flowers in abundance were grown — gladioli, nasturtiums, carnations, violets, pansies, Shasta daisies, dahlias, roses and gardenias in abundance. The natives rowed alongside the boat to sell large bunches of flowers, fresh from their gardens, at low prices.

"This visit to Mexico revealed to us many new things in horticulture and landscape beauties. The striking courtesy extended to the American people visiting in Mexico is an everlasting memory."

TEN FAMOUS TREES.

In listing the ten most interesting trees in America, Henry Clepper, of the American Society of Foresters, excludes such trees as the Washington oak, which is not now in existence, and limits his list to trees that are now living.

First on his list is the Founders' tree, a giant redwood, which stands in Humboldt state redwood park, California, and it is considered the tallest living thing on earth. This tree is 364 feet high and has a circumference of forty-seven feet at the ground, and it has been estimated that it will scale more than 125,000 board feet. The tree was named for the founders of the Save-a-Redwood League.

El Arbole del Tule, next on his list, is considered the oldest living thing on earth and is a true cypress, in the village of Santa Maria del Tule, Mexico. Various estimates place the age of this tree between 4,000 and 10,000 ye..rs. Although this tree has a height of only 141 feet, it has a circumference of 113 feet. Recent examination showed the tree to be in perfect health.

General Sherman tree, a big sequoia in Sequoia national park, California, gains its distinction from the fact that it is the largest tree in the world in wood volume, estimated at 600,000 board feet.

A Norway spruce in Lafayette square, Washington, D. C., is given the fourth place on the list. Size and age do not enter into the value of this tree, but the fact that the President of the United States dedicated it as the national community Christmas tree gives it the necessary distinction.

A tree distinctive because of its sentimental association is the first Mother's tree, a white birch, planted on the shore of Lake Antietam, at Reading, Pa., on Mother's day, 1923.

Two trees take sixth position, the Jefferson pecans at Mount Vernon, Va. The nuts from which the trees grew were given to Washington by Jefferson and planted in 1775. They are the oldest living trees on the Mount Vernon estate.

In Utah, a gnarled and twisted juniper, estimated by various foresters to be 3,000 years old, and without question the oldest juniper in the world, is given seventh position. Although of a ripe old age, this tree has a circumference of only twenty-three and one-half feet and a height of only forty-two feet. It is located in Cache national forest.

The Oak that Owns Itself is the unique name that marks a tree in Athens, Ga. Its fame comes from a marker at the base of the tree which carries the following inscription: "For and in consideration of the great love I bear this tree and the great desire I have for its protection for all time, I convey entire possession of itself and all land within eight feet of the tree on all sides. William H. Jackson." The deed which was executed by the owner in 1820, is recorded in the office of the town clerk.

One not so familiar to Americans as the preceding trees, is an American elm, standing in Hamilton, Ontario, Canada, which was financially endowed for life by an invalid lady.

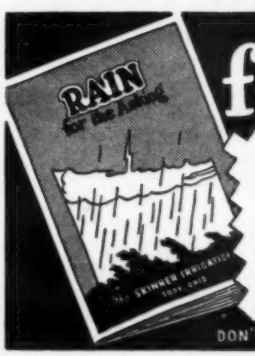
The Duelling oak, long familiar in history and fiction, stands in City park, New Orleans, La. The age of the tree is not known, but it is believed to have been old when New Orleans was founded, in 1718. Its name comes from the famous duels which took place beneath its spreading branches.

TOP-WORKING BIG WALNUTS.

The largest seedling walnut trees in a grove in the Pacific northwest are those at Dundee, Ore., belonging to Charles Trunk, the head of one of the big nut-selling organizations. Mr. Trunk's seedling trees produce good walnuts, some of which are better than the standard varieties, but because advertising has created a demand for Franquette walnuts, a variety of Juglans regia, that brings the top price in the market, Mr. Trunk is top-working his seedling grove to Franquette.

The seedling grove contains twenty-five acres of trees over 30 years old. Four years ago the change was started by top-working a few of the poorest producers among the seedlings. Mr. Trunk decided that the entire grove should be grafted to Franquette as quickly as possible. As some of the trees stand nearly fifty feet in height and have a spread as wide, the magnitude of the task may be appreciated. As the system of nailing on the cions rather than using cleft grafts has been found satisfactory and much more rapid, it is saving a great deal of time and work in this undertaking.

The grafted trees will not produce large crops for another six years, but production for those six years is being sacrificed to gain the desired production for the years following. The oldest grafted tree in the world is reported to be about a thousand years old. How long these walnut



trees will continue to produce is an unknown factor.

Mr. Trunk also has seventy-five acres of Franquettes about 25 years of age, and the returns from this grove were influential in causing him to change the grove of seedlings.

EXTEND ELM QUARANTINE.

The areas regulated under the Dutch elm disease quarantine in Connecticut, New Jersey and New York have been extended to include additional area found infected in a recent systematic survey, the United States Department of Agriculture announced last week. Under an amendment to the quarantine regulations, effective September 11, there are placed under regulation for the first time areas in Litchfield and New Haven counties, Conn.; in Columbia and Ulster counties, N. Y., and the entire county of Dutchess, N. Y. Extensions have also been made, in this amendment, to the regulated areas in one county in Connecticut, two in New York and five in New Jersey.

The federal embargo on the movement of elm material from regulated areas is continued, and the new restrictions also control the movement of such material from nonregulated area through regulated area during the period of annual flight of the elm bark beetle.

The Dutch elm disease has been discovered in a number of townships in Bucks and Northampton counties, Pa. The state has placed an embargo on the movement of elm material therefrom, and federal quarantine action with respect to that area is accordingly withheld at this time.

AT WISCONSIN FAIR.

Four Wisconsin nurserymen exhibited at the state fair this year. They contributed a great deal to the beauty of the horticulture building with garden settings.

The awards were as follows: McKay Nursery Co., Madison, first; Hawks Nursery Co., Wauwatosa, second; White Elm Nursery, Hartland, third; Singer Bros. Nursery, Milwaukee, fourth.

THE address of the Dunlap Nursery has been changed from R. F. D. 1, Concord, Tenn., to Knoxville, Tenn.

Study Lawn Grasses

DEVELOP NEW GRASS.

Belief that hope for improved golf course greens lies in Raritan velvet bent grass was expressed by nearly 200 members of the eastern section of the Golf Course Superintendents of America after recently viewing several plots of the new turf grass at the New Jersey agricultural experiment station, Rutgers University, New Brunswick, where it was produced by Dr. Howard B. Sprague, agronomist, during eight years of painstaking plant selection.

Besides its predicted increasing use by golf courses, the Raritan velvet bent is said to be equally well suited for home lawns, parks and cemeteries.

"This grass is the most valuable aggressive strain of the velvet bent species which we have had under observation here at the station," Dr. Sprague commented in reply to queries for further information on the development. "It has given excellent results in other parts of the state as well as at New Brunswick. Velvet bent of such improved strains as Raritan is fully as useful for home lawns as it is for golf courses."

He added that there will be approximately 4,000 pounds of Raritan velvet bent seeds produced in 1939, and perhaps another 10,000 pounds of other improved strains of this valuable species, all grown within the state.

Raritan velvet is a superior strain of the species Agrostis canina, which produces the finest turf of any grass now available, Dr. Sprague states. It is leafy and makes a dense, velvety turf, rich green in color, capable of enduring considerable wear; is drought resistant, rather tolerant of shade, and endures limited soil fertility. It begins growth in the spring earlier than many other strains of velvet bent and continues growth into late autumn.

"Although velvet bent grass as a species is tolerant of unfavorable soils," Dr. Sprague further explains, "the optimum growth is made on soils which have been adequately limed and fertilized. Late summer and early fall are the most favorable seasons for new plantings. The seeds of this grass are small—there are approximately ten million seeds in a pound. Consequently, the amount of seeds per thousand square feet should be reduced to one pound, which is only one-fourth as great as the rate for the usual lawn seed mixtures. Because of the small size of the seeds, velvet bent should be planted shallow; light raking is sufficient to cover the seeds adequately.

"Velvet bent is capable of tolerating regular close mowing, such as is practiced on putting greens of golf courses. When mowed at short lengths, the grass will require top-dressings two or three times each year with compost of rich screened soil. Top-dressing maintains a true level surface and permits close cutting without injury to the grass crowns."

Raritan velvet, Dr. Sprague revealed, was developed by a breeding program at the New Jersey agricultural experiment station covering six plant generations in eight years, using twenty outstanding selections as foundation stock. A substantial number of single plants were grown each year in each of the foundation lines or families. Superior plants were chosen to represent each family in the successive generations. Since cross-pollination was limited to the selected lines in the breeding nursery, it was possible gradually to concentrate the desired characters and eliminate the undesirable ones. Tests of Raritan velvet during several past seasons were said to have proved its superiority, and production of seeds had entered the commercial stage by last year. B. J.

TEMPERATURE AND GRASS.

A 3-year study by the United States Department of Agriculture, in coöperation with the Missouri experiment station, helps to explain why bluegrass is a "northern" grass, why the growth is retarded in the summer and why Bermuda grass does best in the south. The grass specialists conducted this study under controlled soil and air temperatures ranging from 40 degrees to 100 degrees Fahrenheit. The temperature variations were used to approximate the wide temperature variations in the United States.

Although Kentucky bluegrass made a good aboveground growth at air temperatures of 40 degrees and continued growing even at 90 degrees, the roots grew best at soil temperatures of 60 degrees and stopped growing at 80 degrees. This explains summer "dormancy" of bluegrass.

Canada bluegrass reacted much as did Kentucky bluegrass, except that the best temperatures for both root and herbage growth were about 10 degrees lower than for the Kentucky bluegrass.

Bermuda grass did not begin "normal" growth until soil and air temperatures were about 60 degrees, but both roots and herbage grew well at

100-degree temperatures, the highest used in the study. On the other hand, Bermuda grass was severely injured by 40-degree temperatures.

Orchard grass made its best above-ground growth at air temperatures of 70 degrees, grew slowly at 80 degrees and stopped at 100 degrees. Orchard-grass roots grew best when the air and soil were 60 degrees to 70 degrees, but continued growth at 80 degrees in the lower levels—eight to sixteen inches. This explains why orchard grass will grow farther south than bluegrass. Although bluegrass makes good herbage growth at a higher temperature than orchard grass, its root growth is stopped by even moderately high soil temperatures.

VALUE OF FRUIT THINNING.

The importance of thinking of fruit thinning as a regular orchard operation, rather than as a sporadic seasonal practice, is shown by tests on the thinning of peaches made over a 3-year period in the Youngstown area in western New York by H. B. Tukey and Olav Einset, horticulturists at the state experiment station, Geneva.

Most frequently fruit thinning is thought of as an aid to increasing the size and the quality of the fruit without much regard to the effect it may have on leaves, shoots, fruit bud formation, general tree vigor, hardiness and annual cropping. The 3-year results throw some interesting light on these problems. First of all, thinning has definitely increased the size, color and quality of fruit, as compared with that on overloaded trees not thinned. Thinning has, to be sure, decreased the total tonnage somewhat, but the total crop on unthinned trees has been mostly below two inches in size, whereas the total crop on thinned trees has been around two and one-half inches and of good marketable size. In some years of light crops, of course, there is not much thinning that needs to be done, yet it is a mistake to overlook the general practice, just as it would be a mistake to overlook the spray program and to take a chance on getting by.

The most striking effect of thinning, however, has been on the formation of blossom buds. In 1938 the trees which had been thinned regularly averaged 2,682 blossoms to

the tree, while those that had not been thinned averaged only 967. Quite naturally this difference in bloom was reflected in the crop, the yield from the thinned trees being 312 pounds as contrasted with the yield of 122 pounds from the unthinned trees. This is over double the crop as a result of regular thinning and in a year of lighter crops and better prices is of much greater significance than the figures might seem to indicate.

The tests have shown that it is the early thinning that brings the best result; that is, thinning before the pits have hardened. The earlier the work can be done, the better, but of course, a fruit grower must fit the thinning into his labor program. Best results have been secured from thinning about three weeks after full bloom.

TWO NEW STRAWBERRIES.

Dr. Donald F. Jones, of the Connecticut agricultural experiment station, New Haven, last month announced the names of two new strawberries developed at the station to meet conditions in that state. Shelton is a berry of superior quality coming early in the season, and Hebron yields until July 1. Both introductions have been tried in twenty-four localities in the state with good results.

Shelton and Hebron have survived severe tests and competition in trials at the experimental farm at Mount Carmel. They were outstanding in shape, yield, color, flavor and keeping qualities among the more than 8,000 hybrid seedlings that have been part of the breeding experiment to find berries especially adapted to Connecticut growing conditions.

Shelton is an early berry, ripening about the same time as the standard Howard. It is almost as good a producer and is excellent for keeping. It also has many of the qualities of the high-priced market favorite, Chesapeake. Shelton has the advantage of making a better stand of plants than Chesapeake and is similar in flavor.

Hebron is a late berry. The fruit is glossy, bright and delicious in flavor, and the strong stem holds it well up from the soil. The yield is good.

The new berries are being sold this year by several commercial growers. Other station introductions will be made next year, Dr. Jones announced.

THE United States uses over twenty million pounds of fungicides and insecticides annually in combating crop pests.

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OBITUARY.

Frank W. Dixon.

Frank W. Dixon, 70, former president of the Kansas state board of agriculture and former "strawberry king," died September 10 at his home near Holton, Kan. He had been ill about a year.

Mr. Dixon was born August 31, 1869, at Ripley, O., and went to Kansas with his parents in 1871. He carried on a nursery business as La France Fruit & Plant Farms at one time. He was prominent in various farm organizations.

He was married in 1895 to Anjenette Young. Besides his widow, he is survived by three children, Mrs. W. J. Helm, Kansas City, and Leon and Wilmer Dixon, both of Holton.

CATALOGUES RECEIVED.

[In writing for a copy of any of the catalogues reviewed below, please mention that you saw it described in the American Nurseryman.]

Boyd Nursery Co., McMinnville, Tenn.—Printed wholesale price list for fall of shade tree and forest seedlings, shrubs, vines and evergreens.

Fairview Evergreen Nurseries, Fairview, Pa.—An illustrated 36-page wholesale catalogue of evergreen seedlings, transplants and specimens, ornamental and shade trees, deciduous shrubs, broad-leaved evergreens, vines and perennials.

Judge Vories Peony Farm, St. Joseph, Mo.—A mimeographed retail list of peonies, including Vories originations.

Doty & Doerner, Inc., Portland, Ore.—Red-covered illustrated 48-page booklet of wholesale prices on deciduous trees and shrubs, camellias, conifers, vines, fruit stocks and perennials.

Hedge Lawn Nurseries, Inc., Roanoke, Va.—Illustrated circular on evergreens, shrubs, shade trees and perennials, with emphasis on boxwood. Wholesale rates are listed on a mimeographed sheet.

W. N. Scarff's Sons, New Carlisle, O.—Golden anniversary edition of the firm's retail catalogue, with covers in color, presents fruit and nut trees, shade trees, shrubs, evergreens and roses.

William Borsch & Son, Inc., Maplewood, Ore.—Small printed folder contains wholesale price list of perennials, in alphabetical order, only of stock available in quantity.

Mathews Eggert Nursery, North Muskegon, Mich.—Folder carrying wholesale price list of lining-out stock, evergreen and deciduous.

Isaac Langley Williams, Exeter, N. H.—Trade list of native plants in booklet form embraces ferns, orchids, aquatics, bulbs, ground covers, vines, evergreens, trees and shrubs.

Northbrook Gardens, Northbrook, Ill.—Peonies and irises of various types are named in retail folder.

Conard-Pyle Co., West Grove, Pa.—Retail catalogue of Star roses, with a few perennials, entirely illustrated in color.

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